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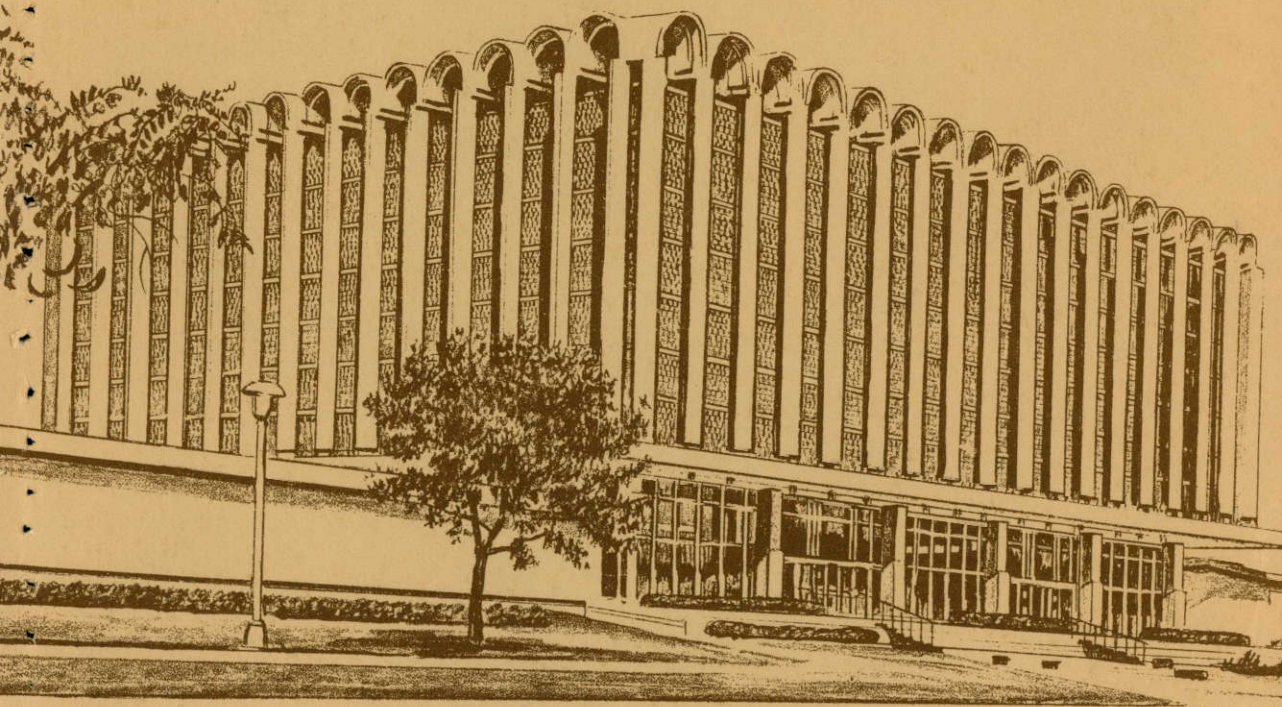
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The Panhandle Aspect of the Chaquaqua Plateau

Robert G. Campbell



TEXAS TECH UNIVERSITY

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The Panhandle Aspect of the Chaquaqua Plateau

Robert G. Campbell

INTRODUCTION

This study is of a prehistoric American Indian culture known as the Panhandle aspect. The study is concerned also with the origin, development, and ultimate fate of this or other late prehistoric and early aboriginal cultures within the area. It is hoped that a comparison of local prehistoric materials with materials from adjacent geographic areas of Colorado, New Mexico, Texas, and Oklahoma will determine the areal and temporal extent of Panhandle culture on the Chaquaqua Plateau.

PANHANDLE CULTURE

The Panhandle culture was recognized first as a distinct prehistoric manifestation in the Texas panhandle. The first published reports of archaeological field work concerned with materials later known as Panhandle resulted from field investigations in 1907 in Ochiltree County, Texas. In 1910 and 1912, accounts of this research by T. L. Eyerly of the Canadian Academy were published (Studer, 1934:80). This first excavation of a Panhandle site occurred at a location in the northeastern section of the Texas panhandle on Wolf Creek, a northeasterly flowing tributary of the Beaver, or North Canadian, River. The site was referred to as the Buried City (Studer, 1955:88), but later was relocated and renamed the Handley ruins (Moorehead, 1931:94). Although visited by J. Walter Fewkes in 1914 or 1915 (Moorehead, 1931:94) and by Warren K. Moorehead in 1917 (1921:1) and 1919, further excavation of this and other panhandle sites did not occur for at least a decade. In 1919 Moorehead visited the King Ranch ruins 25 miles southwest of Handley ruins on the Canadian River (1931:94); in 1920 he returned to Handley ruins and initiated a period of excavation in the Texas Panhandle that was to continue over two decades. These expeditions resulted in the emergence of a view that recognized these materials as representations of a distinctive prehistoric culture.

Reconnaissance by Moorehead located sites on Antelope, Cottonwood, Tarbox, and Dixon creeks; on the Canadian River; and at Landergin Mesa (Moorehead, 1921:4-5). At Antelope Creek he located 17 ruins, the largest of which, the A-C ruin, was to become one of the two type sites for the later defined Antelope Creek focus.

During the summer of 1929, R. L. Olsen of the American Museum of Natural History and Floyd V. Studer made a brief examination of the Alibates ruin. This reconnaissance was followed by more extensive investigations by a party led by J. Alden Mason of the Pennsylvania University Museum (Mason, 1929:329-330).

In the same year, investigations of Cottonwood and Tarbox Hill ruins were renewed by a party from Texas Technological College led by William C. Holden. Cottonwood ruin was disturbed too badly to warrant further study. However, at the Tarbox, five or six ruins were defined, and the party proceeded to excavate a number of them (W. C. Holden, 1929:23-30). In addition to excavation at these various sites, either visitation or survey or both, were continued by both Walter Hough of the Smithsonian Institution (1930:368) and Cyrus Ray of the Texas Archaeological and Paleontological Society (1930:368-369).

In 1931, Studer published an account of 24 years of survey, stating that 110 major ruins had been located (1931:70); an additional five sites were added to this total within the year (Ingerson, 1931:93). Studer also published a map locating 32 of these ruins and provided a summary of Panhandle culture in which he concluded that the culture resulted from a westward migration of peoples from the Mississippi Valley and constituted a stage of Pueblo (Southwestern) culture predating the great cliff dwellings in the Southwest (Studer, 1934:82; Moorehead, 1933:10). The latter statement implies that occupation in this area occurred between AD 400 and 1100 (Wormington, 1951:49, 59).

In March 1930, Holden reopened excavations at the A-C ruin (Antelope Creek), a site that had been dug previously by Moorehead in 1920 (W. C. Holden, 1930:27, 1932*b*:288, 1931:21-32). Later the same year, he investigated the most southwesterly Texas Panhandle site, Tierra Blanca (W. C. Holden, 1931:50-52).

In 1932, Holden proceeded with the excavation of B. T. K., or Saddleback ruin, the largest ruin so far investigated. This site contained Pueblo pottery that provided a tentative date for the Panhandle culture, AD 1350 to 1450 (W. C. Holden, 1932*b*:287-293, 1933:39-52; Haynes, 1932). Excavation in the area was furthered in 1934 by Studer's work on ruin number 55 (Studer, 1934:80-89, 1931:84). Further work was conducted at the A-C ruin by Ernest J. Lowery (1932) and by C. S. Johnson (1939).

Additional survey by E. B. Sayles (1935) and work on the Alibates and Chimney Rock sites by E. M. Baker (Baker and Baker, 1941*a*, 1941*b*; Hobbs and Tichy, 1941:116) added to the field research. With the Bakers' investigations, 20 years of excavation and survey came to a halt because of World War II.

Following the war, interest was renewed. In 1946 Alex D. Krieger summarized Texas Panhandle materials and designated them as the Panhandle aspect. The classic sites in Texas were considered a unique Texas representation and were designated the Antelope Creek focus (1946:71-74). He considered Antelope Creek to be a combination of Plains and Pueblo cultures, but felt that it was predominantly the former. The existence of this focus was dated between AD 1300 and 1450. Krieger suggested that the culture was derived from the Upper Republican (1946:71-73), a focus located in the loess plains of Nebraska and Kansas (Wedel, 1947:151,154). Although he limited his description to the Antelope Creek focus, he retained the broader classification of the Panhandle aspect in expectation of future foci being defined as variants of Antelope Creek.

The conclusions drawn by Krieger in defining the Antelope Creek focus gained acceptance (Reed, 1947; Suhm, Krieger, and Jelks, 1954:66-73) and altered previous opinions on Panhandle temporal and cultural affiliations.

Although campsites containing Panhandle cultural materials and other less permanent habitation sites had been noted briefly in the past (Mason, 1929:326), excavation of one was not begun until 1953 when campsite CR-1 in Moore County, Texas, was examined by Keith and Alma Glasscock (1955). Interest in various Panhandle stone materials used for chipped stone implements brought discussions of the Alibates quarry (Bryan, 1950), variations in the quality of flint materials from site to site (Shaeffer, 1958:189-191), and the many different sources of chipped stone material (Green and Kelley, 1960:413-414). Another excavation of a campsite, the Lake Creek site, provided evidence of possible Woodland occupation in the area that predated Panhandle culture, and suggested that local Woodland peoples had been ancestral to the later Panhandle peoples (Hughes, 1962:84).

Salvage archaeology in the Sanford Reservoir area of the Canadian River brought renewed activity concerned with Panhandle culture villages. A survey in 1962 recorded 25 such sites (W. Davis, 1962). Excavation of three sites—Conner, Medford Ranch, and Spring Creek—was undertaken the same year. The results of this research revealed previously unsuspected Panhandle architectural variations (Duffield, 1962, 1964). Additional investigations were conducted by Jack Hughes of the Panhandle Plains Museum at the Sanford site (Duffield, 1964:24), at the Handley ruins (Baerreis and Bryson, 1966:112), and by F. E. Green of Texas Technological College at the Footprint site (Green, 1967). Further excavations south of the Canadian River indicated that Panhandle culture may have penetrated the Llano Estacado (Ellzey, 1966:59-65). There have been attempts at dating Panhandle sites by the radiocarbon method (Baerreis and Bryson, 1966:113-114), and by Pueblo trade ware (Crabb, 1968:83-89). Other studies investigated Panhandle faunal remains and paleoecology (Duffield, 1971:35-36).

The Texas Panhandle received further attention as the result of recent federal action; Alibates ruin and quarry have now been made a National Monument (Anonymous, 1962). This, perhaps, will bring this site and similar ones into public view and encourage further productive research (E. M. Davis, 1965:4).

In the Oklahoma Panhandle, sites of Panhandle culture were discovered by the Moorehead expedition in 1919 (Moorehead, 1931:1, 1933:92). In 1929, the Kenton Cave sites containing agricultural materials were found and excavated by E. B. Renaud of Denver University. He considered the material to be affiliated with Southwestern Basketmaker culture (Moorehead, 1930:148-150); but, more than likely, it is associated with Panhandle culture.

Excavation of Panhandle village sites did not occur until 1934 when the Stamper site was investigated under the supervision of C. S. Johnson (Clements, 1945). An account of the excavation was published by Watson (1950). The site contained materials that clearly showed a close relationship to the Antelope

Creek focus of the Panhandle aspect, but the site was designated as a type site for a new Panhandle focus, the Optima focus (Watson, 1950:47). Another summary of the Optima focus was provided by R. E. Bell and D. A. Baerreis (1951:83-88); the excavation of the Roy Smith site in 1965 provided more understanding of this northern extent of Panhandle culture (Bell, 1965a:1, 1965b:4; Schneider, 1967:214-215, 1969:118-119). Research in western Oklahoma (Kay County Chapter, 1963:123-127; Shaeffer, 1965:77-151) and southwestern Kansas (Bowman, 1960) suggests that this prehistoric culture may have extended northeastward into the latter areas.

As yet, northeastern New Mexico remains the only area in four states in which a distinctive variant of Panhandle culture has not been defined. Few efforts have been made by New Mexican archaeologists to define any cultural complexes within this region, but it appears that the first recognition of Panhandle materials, although not Panhandle culture as such, was made from materials that came to the attention of Adolph F. Bandelier in New Mexico (Hobbs, 1941:121).

Attempts to locate Panhandle sites here were instituted by Moorehead in 1921, who located the Congden Ranch site 12 miles south of Logan, New Mexico. An additional site was located near Mora, New Mexico (Moorehead, 1931:116). Activity in the area was continued by Mason (1929), who investigated a site at the juncture of the Mora River and Sapello Creek. This was a multiroom structure with much Pueblo pottery, including utility ware. Mason noted similarities in the architecture with Texas ruins, but the site seems to have closer affiliations with Pueblo ruins. Another site that was located on Loma Parda Mesa contained "low walls of piled stone," which suggested Panhandle affiliation (Mason, 1929:335-337). In 1930, the Texas Tech Archaeological Expedition, headed by W. C. Holden, investigated sites in the area between Tecolote Creek and the Mora River near Las Vegas, New Mexico. One site, located within 10 miles of Las Vegas, may have been a Panhandle type (W. C. Holden, 1931:44). However, the greater part of the efforts of this expedition were concentrated on Tecolote ruin, a Pueblo site (W. C. Holden, 1932a:25-28), occupied about AD 1200 (Ferguson, 1933:197) prior to Panhandle occupation of the area. Excavations of rock shelters along the Canadian River in the vicinity of Wagon Mound in 1932 (Mera, 1944:295; Hall, 1938) yielded material suggestive of Panhandle occupation.

In 1942, E. B. Renaud published his survey of stone enclosures in which he enumerated eight sites visited by him, all of which lie between Loma Parda and Tucumcari, New Mexico. Three are decidedly Panhandle, but the others are questionable (Renaud, 1942a:27-34). Renaud did not associate any of these sites with Panhandle culture.

Following the summary by Renaud, little attention was given to possible Panhandle occupation in northeastern New Mexico. Only brief mention was made of Panhandle materials such as cord-marked ware (J. Holden, 1955:109; J. H. Gunnerson, 1959:146; Hammack, 1965:14). However, sites at both Gallegos and Deadman's Mesa on Ute Creek and also at Puerto del Sur near Las

Vegas, New Mexico (Wiseman, 1972), yielded architectural features suspiciously similar to those characteristic of the Panhandle culture. Fred Wendorf, in a summary of northeastern New Mexico archaeology, postulated that Panhandle peoples invaded this area sometime between AD 1300 and 1450 (1960:62) and that they occupied the Dry Cimarron River, Canadian River, and Las Vegas areas (1960:60).

Southeastern Colorado sites with probable Panhandle materials have been known for some time. However, recognition of them as representatives of a culture with Panhandle affiliations did not occur until after the relationship between Oklahoma and Texas materials had been demonstrated. As yet, the Colorado relationships are not too widely known or accepted.

In 1874, a military observer, Lieutenant Buffner, reported Indian "forts" in the area of Saguache, Colorado (Huscher and Huscher, 1943:7). Some of these sites were investigated in the early 1940's and were considered then as either of Prehistoric Navajo origin, the Saguache focus (Huscher and Huscher, 1943:69, 83), or of some unknown origin (Renaud, 1942a:23-27). Structures similar to these were reported by Moorehead in the Canon City area (1931:116-117). In 1930, Renaud became familiar with this type of site, and since then, he has reported a number of them (1931, 1932, 1933, 1935a, 1937a, 1942b, 1942c, 1942e, 1943, 1947; Renaud and Chatin, 1943).

Other investigators reported additional sites and rooms during a 20-year period (M. Boyd, 1940, 1942; W. Boyd, 1949; Tatum and Dondelinger, 1945; Withers, 1948; Anonymous, 1950; Chase, 1952). Although some excavation had occurred at a few of these sites (Renaud, 1942a:44; Renaud and Chatin, 1943:27-28; Huscher and Huscher, 1943:9-12; Tatum, 1947:33-36), most findings have not been fully described in print yet, and preliminary conclusions did not relate these sites to the Panhandle culture.

The first to suspect the existence of Panhandle culture in Colorado was Krieger (1946:53), who reviewed materials recovered from the excavation of a rock shelter on the Purgatory River in Colorado (Gebhard, 1943:22-29) and noted a marked similarity between these and Texas materials.

With the excavation of Snake Blakeslee I on the Apishapa River, Pueblo County, Colorado (Chase, 1951; Chase and Stigler, 1949), the postulation of the existence of Panhandle culture in Colorado was advanced (Chase, 1951:7). This site and a number of other similar ones have been designated as examples of the Apishapa focus (Withers, 1954:2-3). It was assumed that the Apishapa focus resulted from migration from the north, and that occupation was coeval with the other Panhandle foci (Steen, 1955b:18). Excavations of a rock shelter on the Saint Charles River further substantiated the presence of Panhandle culture in southeastern Colorado (Nelson, 1970:1-11).

Another interesting site located in southeastern Colorado is the Graneros site, which contained cord-marked pottery of the Woodland type: small, triangular corner-notched points, and structures (Withers, 1954:2-3). One structure has been radiocarbon dated at AD 450 \pm 55 (Breternitz and Wood, 1965:3). This site may have some ancestral connection with later Panhandle culture materials.

In summary, one can define the various representatives of Panhandle culture as having a horticultural-foraging economy; defensive villages with house clusters; houses of various forms, but with foundations of vertical row slabs and roofs, or superstructures, of perishable materials; grinding implements consisting of slab metates, oval manos, and fixed mortars; cord-marked, globular pottery; small, triangular, laterally-notched projectile points and a few atlatl points; many similar stone and bone implements; possible storage cists; and single, flexed, pit burials. The major development of Panhandle culture seems to have occurred between AD 1300 and 1450; its nearest relative, if not its ancestor, was the Upper Republican culture.

The foregoing definition of Panhandle culture might be considered biased in light of sites and locales at which most field research has been conducted. Obviously, larger sites with structures of more permanent construction materials are detected more readily and, therefore, are among the first to be discovered and investigated. Also, extensive sites are more apt to provide a greater quantity of materials needed for descriptive and comparative purposes. Hence, attention to this type of site may have led to a disproportionate concentration, which, in turn, may have directed attention from other sites that well could be more typical of the culture. Economical and expeditious research certainly would be required to investigate those individual sites that promise to produce the maximum amount of evidence.

As a result of the insufficient sampling of sites and materials based on previous research, inadequate evidence has been obtained to demonstrate conclusively the proper relationship, if any, between New Mexico and Colorado materials with those of Texas and Oklahoma. Either typological distinctions or similarities or both, possible temporal variations, and areal ranges and sources of origin for cultural materials, or the various cultural foci, remain to be demonstrated or explained fully. This paper will attempt to resolve some of these problems through analysis of Panhandle materials from the Chaquaqua Plateau of southeastern Colorado.

CHAQUAQUA PLATEAU

According to Fenneman (1931:37-38), the Chaquaqua Plateau forms the northern portion of the Las Vegas Plateau subsection, the latter being one of the three subsections of the Raton section of the Great Plains. This section has been characterized as "forming not only the most rugged portion of the Great Plains province, but also in possessing greater altitude and variety of land forms than elsewhere" (Levings, 1951:10). It is the westernmost section of the plains, and nearly all lies within southeastern Colorado and northeastern New Mexico. The other two subsections consist of the Raton Mesa group and the Park Plateau (Fenneman, 1931:37).

The Raton Mesa group, consisting of lava-capped mesas over remnants of a former high plain, is a series of east-west mesas that roughly approximate the southeastern Colorado and northeastern New Mexico states lines. The section extends 100 miles east-west and terminates in the Black Mesa of the westernmost

part of the Oklahoma Panhandle. The Park Plateau, which forms the western subsection, is a much dissected highland containing the outstanding Spanish Peaks, extinct volcanoes reaching 13,000 feet above sea level. The third subsection consists of the lower, but still elevated, Las Vegas Plateau. This area is a high plain cut by canyons and studded with volcanic buttes, cones, and mesas. The Raton Mesa group divides the subsection into two flanking plateaus, the Las Vegas Plateau proper to the south and the Chaquaqua Plateau to the north. This study concerns the southeastern part of the latter plateau.

The southeastern district is located in eastern Las Animas County and adjacent parts of Baca, Bent, and Otero counties, Colorado. As plains terrain, it consists largely of temperate steppe land. However, the district displays some physiographic and biotic diversity and conveniently falls into four regions that grade into one another (Fig. 1). The southern periphery, the Colorado-New Mexico state line, consists of a series of lava pediments, or mesas, belonging to the Raton Mesa subsection, the long axis of which generally runs from east to west. Between and at the base of these steep mesas are either large arroyos or shallow canyons or both, which reach their maximum depths to the south and east. The mesas rise above their bases to elevations of 6000 to 7000 feet above sea level. The highest and largest mesa is the Mesa de Mayo, which rises 1000 feet above the plain that bounds it along its northern periphery. The plain, the Tobe Plain, is a northeastward-extending grassy peneplain, 5000 to 6000 feet in elevation, dotted occasionally by intermittent playa lakes and broken along its northern boundary by multiple canyons and an escarpment. This latter area forms a third subregion, which in its upper extremities, the southern portion, consists of rapidly cutting canyons (cedar breaks) that are narrow, steep, rocky, and covered with relatively dense stands of juniper and piñon pine. The lower portions of these canyons have been cut deeper and wider and have provided the canyon bottom with level flood plains adequate for flood water irrigation farming. Elevation of this region varies from 4500 to 6000 feet. As these canyons widen and juncture with the flood plains of the Purgatory River and Rule Creek along the northern periphery of the region, a fourth region is formed. This consists of an alluvial plain of varying width dotted by elongated ridges or near circular buttes, remnants of the former, higher peneplain now eroded away. The lowest elevation for the region is along the Purgatory River in the northeastern sector at about 4000 feet (Duce, 1924:77-79).

Geologically, the area consists largely of a dome upon which Pleistocene lava flows have risen to form the mesas along the southern periphery. The majority of strata exposed in the northern regions consists of various Permian to Triassic sandstones (Scott, personal communication), the most prominent of such being the Dakota sandstone, a formation consisting of alternate layers of sandstone and shale. Drainage is to the north, except along the southern periphery; wherever the Dakota has been eroded to the level of the shale, the head of a cedar break has been formed. In many cases, the shales, impervious to water, have forced subsurface water out of the exposures to form springs or seeps in these cedar break heads (McLaughlin, 1955:22). The Dakota erodes in large

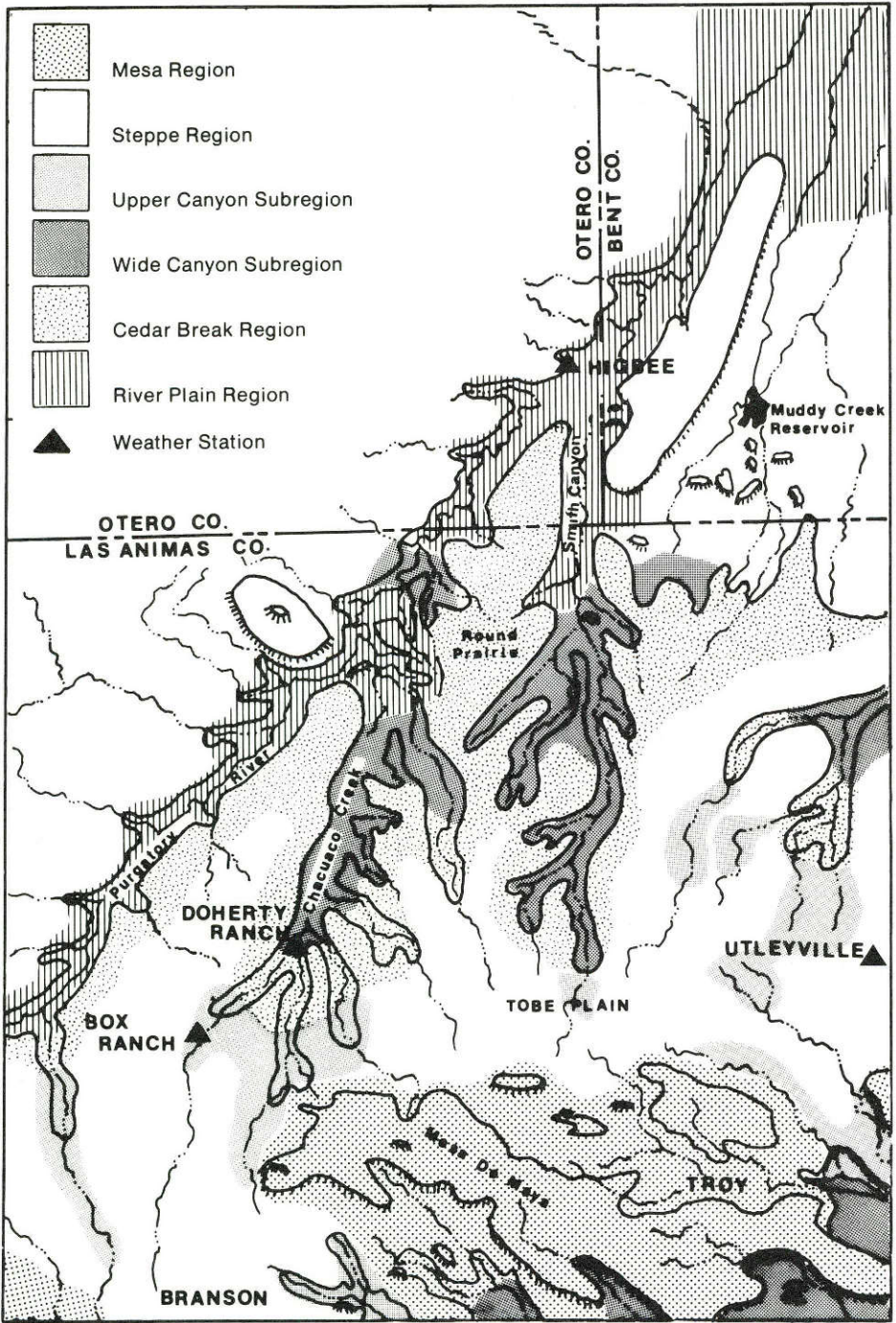


FIG. 1.—Topographic regions of the Chaquagua Plateau.

blocks that fall from beneath the caprock and above the shales, forming rock shelters useful for habitation (Duce, 1924:89-90). These cedar breaks often form islands of flora of wide variety, supplying some edible plant material. In addition to natural shelter, potable water, and vegetational food, the breaks contain a variety of game, such as turkey, deer, and many small animals. The breaks are also central among the other regions and, as such, are accessible immediately for occupants of the breaks who would choose to exploit the resources of the other regions.

As the canyons cut below the Dakota, the underlying weaker formations have been eroded readily and have resulted in steeper, deeper, and wider canyons. The underlying Entrada and Morrison formations contain few natural shelters, but in the deeper canyons nearer the alluvial plains where the base formation, the Dockum sandstone, is exposed, large amphitheatre rock shelters appear. Seeps are infrequent and less accessible, but intermittent pools appear in the wider and more level canyon bottoms. These level flood plains are adequate in width and soil composition for subsistence farming (Johnstone *et al.*, 1962:34-48). Both the Dakota and Dockum sandstones as well as some Mesa de Mayo lava (basalt) exposures leave smooth faces susceptible to aboriginal rock artistry.

The area averages between 13 and 17 inches of precipitation annually, with generally more falling in the higher elevations to the south than in the lower elevations to the north (U.S. Department of Commerce, 1965:16). Precipitation is erratic from year to year as well as from locality to locality (U.S. Department of Commerce, 1955:4-40). The majority comes from spring and summer cloud-bursts, causing flash floods that carry large amounts of silt into the lower canyons where bottlenecks at bends or narrows force its deposition onto the level flood plains. Silt deposition often is sufficient in amount and extent to cover native vegetation and inhibit its growth while limiting its effect as a competitor to domesticated plants sowed in the silt. Winters are usually mild, but mesas and steppes occasionally experience serious blizzards. Summers are usually warm, with the higher temperatures in the canyons and flood plains, providing these regions with a fairly lengthy growing season. The fickle precipitation pattern may leave some canyons completely dry some years, whereas others nearby may be adequately watered. Such conditions required primitive farmers to shift frequently from one canyon locality to another throughout the years. This certainly occurred in prehistoric times, inasmuch as adequate evidence of many droughts in the Great Plains has been noted (Antevs, 1955; Scott, 1963:40-48; Weakley, 1940:92; Wedel, 1964:14-15).

Mesa flora may be considered foothill variety (Pesman, 1959:107-110) consisting of grasses, scrub oak, occasional stands of ponderosa pine, and, in isolated cases, aspen. The steppes, covered by the usual grasses, yucca, and cacti (Pesman, 1959:153-154), were grazing land for antelope and, in late prehistoric and early historic times, buffalo (Duffield and Pillaert, 1967:3-5). When left unchecked, prairie dogs abound in these meadows. Cedar breaks are noted for their stands of juniper and piñon pine as well as islands of mesa

(foothill) vegetation. This region provides the best browse for deer throughout the entire region. The lower canyons and wider flood plains usually are covered sparsely with steppe vegetation; but near the more permanent pools or streams, the coulees, are stands of cottonwood, willow, and boxelder (Pesman, 1959:153-154). Game is less frequent here. However, beaver are known from these regions; they may have provided temporary barriers in canyons and assisted in the deposition of silt. At least 54 species of mammals (Burt and Grossenheider, 1952), 14 species of snakes (Schmidt and Davis, 1941), and eight species of lizards (Smith, 1946) occur in the general area of the plateau. Such variety would have provided hunters with adequate game and a needed supply of salt for their diet; but the latter could be obtained from nearby western Oklahoma (Gould, 1901:182-183).

For a people with a foraging subsistence pattern, the cedar breaks, with their springs, edible plants, access to multiple game, and natural shelters, would be the most utilitarian area. The mesas would be secondarily so, the infrequent water supply making it less useful. The plains, more poorly furnished, were satisfactory for historic groups involved with livestock, but certainly could have been used by prehistoric groups for short seasons (Wedel, 1953:504-505). Although the lower canyons had less natural supply, their higher temperatures, flood waters, and silt deposits provided aboriginal farmers with their best opportunity to employ horticultural practices; here the evidence of more permanent or sedentary settlement is found. These canyons also served as winter shelters for historic horse nomads (Wedel, 1963:10). The wider flood plains, having fewer natural barriers that arrest waterborne silt, apparently were settled more sparsely by farming peoples. However, all areas provided some usable wild plant products (Campbell, 1970:3-4). Some 34 plants known on the plateau were used in historic times by the Comanche (Carlson and Jones, 1940:517).

The first known statement regarding a possible archaeological site in the district came from Colonel R. I. Dodge (1877:17), who described the petroglyphs at a site now known locally as Bear Rock. Following this early account, a period of 53 years elapsed before professional attention was given to the prehistory of the Chaquaqua Plateau. Renaud (1931:68) launched the first such professional work in the area, and one of the sites that he mentioned was the same Bear Rock. This survey located 10 sites within Las Animas County, one of which consisted of an important series of petroglyphs at a site now known as Miner's Peak (1936:35, 1937b:45). Later surveys of Renaud located more sites in the area, some of which proved to be stone enclosures, as Renaud termed them. Subsequent reports (1942a:21-23, 1942c:56, 1947:5-20) described six of these sites with seven sets of ruins in or near the southeastern district. These enclosures are considered by some as being associated with Panhandle culture (Steen, 1955b). Few other investigations or reports of the Chaquaqua Plateau sites occurred before 1941. A visitation to a rock shelter and game wall was reported by Latham (1937:142-145); a survey along the Purgatory River in 1938 discovered caves containing prehistoric material including cord-marked pottery (Wedel, 1939:284; Abbot, 1940:16).

In the early 1940's activity was renewed. H. H. Robb provided a brief report of the incomplete excavation of Rocky Ford Cave (1942:19). In 1943, P. H. Gebhard excavated some rock shelters on the Purgatory River. Another excavation undertaken in the 1940's led to an examination of a stone enclosure on the Apishapa River (Tatum, 1947:33-37).

From 1942 to 1947, personnel from Trinidad State Junior College, Colorado, carried out a series of archaeological operations in Las Animas County. Fifteen campsites, one rock shelter, and two sites with burials were found in one survey (Dondelinger and Tatum, 1942:2-5); another three sites with petroglyphs or pictographs, one of which was Miner's Peak, were located or relocated and reported (Tatum, 1944a:38-43). Another survey mentioned eight stone enclosures and seven stone defenses (Tatum and Dondelinger, 1945:12-14). An examination of five or more private collections from the district indicated the wealth of prehistoric material that was available in the area (Dondelinger and Tatum, 1944:59-64).

A brief survey in the late 1940's by A. M. Withers located 13 sites (Anonymous, 1950:14). The survey was continued in 1949 by Stigler and Chase, who investigated sites in the area of the Chacuaco-Purgatory junction, Termintin Creek, and the Mesa de Maya. This expedition included excavations on a stone enclosure on the Apishapa, Snake Blakeslee I; in a rock shelter on Trinchera Creek, Trinchera Cave; and in a rock shelter on the Mesa de Maya, Salt Cave (Chase and Stigler, 1949). The stone enclosure provided the first suggestion of a relationship between stone enclosures and Panhandle culture structures (Chase, 1951). Survey and excavation continued within the district between 1952 and 1953 by Chase (1952:21) and Dick (1954:5). A brief survey of the Alkali Crossing area by J. B. Wheat was made in the summer of 1954 (Colorado University Museum). Excavations at the rock shelter on Trinchera Creek, Trinchera Cave, were renewed in the early 1950's; the site provided a stratified sequence of cultural stages (Rocky Mountain News, 1955).

Following this activity, little was reported for the region until the early 1960's. In fact, it was noted that this area largely had been neglected by archaeologists when compared with southwestern Colorado (Dick, 1953a:53-77). In 1963, the test excavation of Medina Rock Shelter produced evidence of prehistoric horticulture (Campbell, 1963:53-60). Examinations of petroglyphs within the area were made in 1964 (Baker, 1964a), and the excavation of a midden circle or mescal pit near the Mesa de Maya was completed in 1965 (Greer, 1966:57-65). A recent study of the distribution of pottery types in Colorado indicates that on the southeastern Chaquaqua Plateau, six localities have yielded Pueblo ware; one, Upper Republican; and one, cord-marked (Nelson, 1967:78).

The major weakness of previous field work has been the lack of sufficient published data describing the results. To date, only three adequate or near adequate reports of excavations have appeared (Campbell, 1963; Gebhard, 1943; Greer, 1966). The surveys are of limited value to future investigators because most of the data are inadequate regarding description of materials and the nature and location of sites. Nonetheless, 26 sites within the district are

recorded in the literature. A second weakness in the studies is the lack of descriptive work. Comparisons of materials from the Chaquaqua Plateau with those found elsewhere, especially in the Plains, have not been made.

METHODS

The present study was initiated in July 1964 and continued intermittently until May 1968. After examining library materials, museum records and materials, and materials and notes of local private collectors, I initiated a site survey, which was followed by test excavation and intensive collecting of selected sites. Finally, description and analysis of field observations and materials was undertaken.

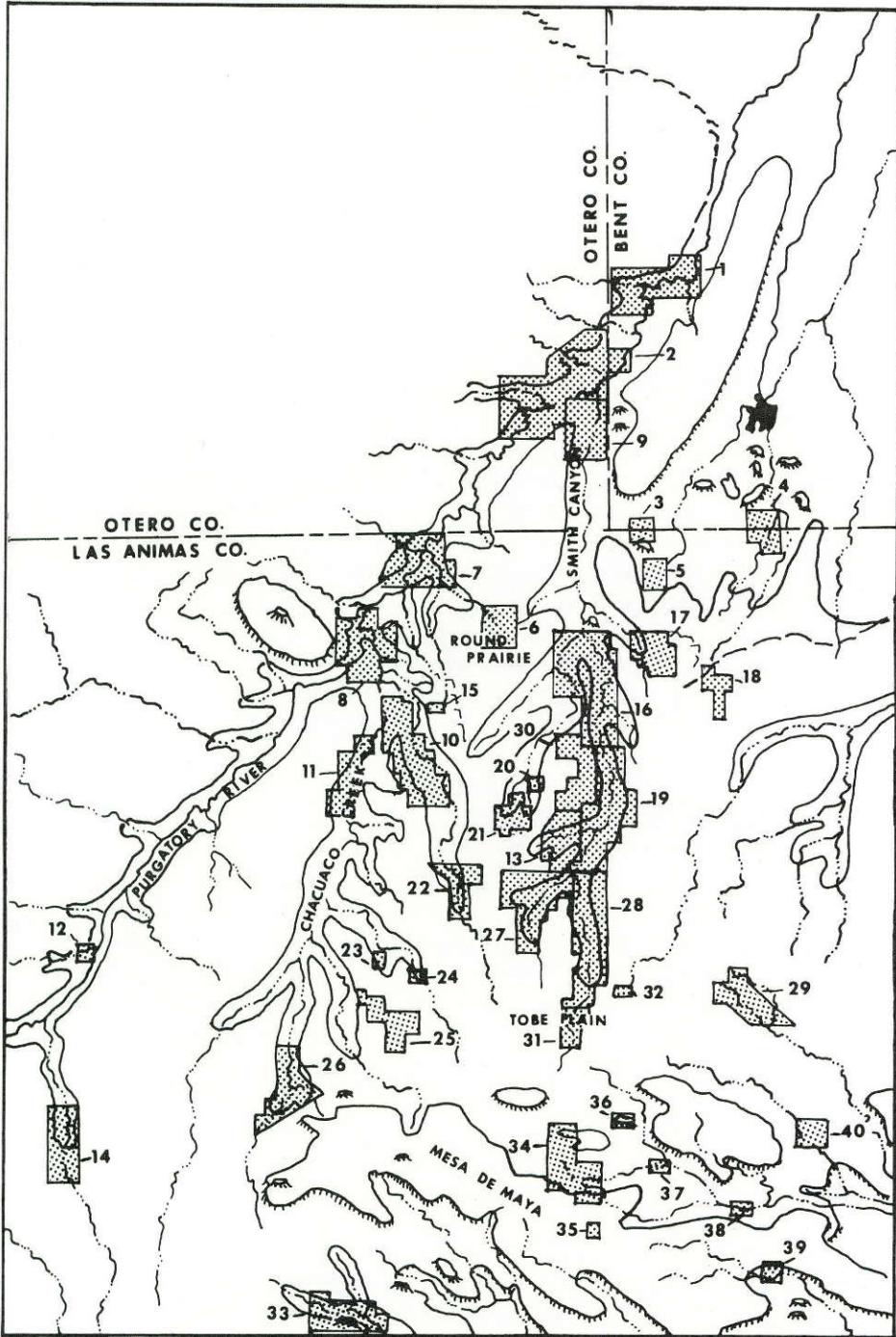
Due to the limited bibliographical background, it was necessary to check museum records to obtain additional information regarding site locations. During the summer and autumn of 1964, site cards and collections were examined at the Colorado University Museum, Boulder; Denver University, Department of Anthropology; and Trinidad State Junior College Museum, Colorado. A total of 50 sites within the district was recorded. To augment these data, 14 local collectors residing in the district were interviewed; their collections and records were examined. Twelve of these individuals assisted in locating 191 new sites. One local resident, Everett Jackson, Jr., reported 100 of these sites. Only a few of the sites reported or listed in museum records were revisited, but 76 per cent of those reported by local residents were examined in the field. Preliminary to the onset of the field work, a total of 267 sites was known, and some material from most of the sites had been studied.

Most of the time in the field was devoted to site survey, which provided data regarding prehistoric settlement patterns and environmental adjustment, in addition to cultural remains that assisted in devising significant types. The survey was of the nature referred to as Type IV by Ruppe (1966); that is, records were compiled of all sites, regardless of quality, type, or location, and maximum observations were made of all surficial evidence. The difficulty of the terrain resulted in certain areas, or zones, receiving more inspection than others. Some types of sites, particularly subsurface ones, were more difficult to locate than those with prominent structures; this resulted in more accurate recording of some types of sites than others.

Because the district consisted of 2000 square miles, it was not possible to survey all of it, but instead, certain areas, or zones, were selected for investigation (Fig. 2). The primary factor conditioning the selection of a zone was its



FIG. 2.—Archaeological zones of the Chaquaqua Plateau: 1, Alkali Crossing; 2, Higbee Valley; 3, Muddy Gap; 4, Ninaview; 5, Round Prairie; 6, Muddy Creek Head; 7, Rock Crossing; 8, Spanish Town; 9, Smith Junction; 10, Lower Plum Creek; 11, Red Rocks Ranch; 12, Luning Junction; 13, Cedar Pin; 14, Mid Terminin Creek; 15, Gutierrez Spring; 16, Piñon-Smith Junction; 17, Upper Long Canyon; 18, Mort Ranch; 19, Januarys; 20, Nightmare Mesa; 21, Upper Piñon; 22, Mid Plum; 23, Upper Little Poitrey; 24, Upper Poitrey; 25, Umbart Canyon; 26, Steamboat Island; 27, Cherry Canyon; 28, Moore Homestead; 29, Pintaha Canyon; 30, Mustang Canyon; 31, Smith Arroyo; 32, Kim Lake; 33, Long Mesa; 34, Dalerose Mesa; 35, Maes Mesa; 36, Little Mesa; 37, Garcia Dam; 38, Velarde Ranch; 39, Sheep Pen; 40, Parker Place.



topography. Zones of varying size were selected from each of the topographic regions, enabling me to compare the different types of sites from region to region. Recording the predominant types within each region provided evidence of environmental adjustment and settlement patterns. Not all regions were given equal attention; those yielding more evidence tended to be favored because cultural material was needed for typological purposes. Most of the zones were concentrated near the center of the district in the vicinity of Smith and Chacuaco canyons.

The wide canyons were covered most extensively. Ten zones included a total of 70.5 square miles in 15 parts surveyed. These areas yielded the greatest density of sites with structures of presumed Panhandle affinities. The river plain also contained a large number of structured sites, mostly stone enclosures. Some 44 square miles were covered. In the upper canyons, 35.5 square miles were surveyed. Only about 30 square miles of steppe region were surveyed. In the cedar breaks, 28.5 square miles, about 11.9 per cent of the subregion, were surveyed; this timbered and rugged terrain required close inspection. Only 12.5 square miles of the mesas were covered. Many zones were revisited a number of times, and, on occasion, a missed site was recovered (see Table 1).

During the investigation of the zones, any locality containing evidence of prehistoric or historic aboriginal peoples was recorded as a site. If the locality was demonstrably not Euro-American in origin, it was temporarily considered of aboriginal derivation. Some sites remain questionable in this regard, inasmuch as similar locations and resources were exploited by both groups. For example, it is known that Spanish-speaking homesteaders collected and, on rare occasions, produced typical manos and metates, which they discarded randomly. Also, early shepherders in the area used rock shelters as temporary encampments and left evidence of use. It is difficult to determine who used them.

Sites were classified by four types of evidence. The primary classification dealt with protective quality. Sheltered sites are those within sheltered locations such as caves, crevices, or rock shelters where perishable materials usually are preserved and artifacts likely have remained in the position of original deposition. These were preferred for test excavations because of their promise of a stratigraphic sequence. Subsurface sites are those buried beneath overburden. These were assumed to have materials *in situ*; but perishables were not expected to be found. Sites of this nature usually imply great age; but because the field project was concerned largely with late prehistoric cultures, they were not investigated intensively. Surface sites are those found in the open; they were presumed to be stratigraphically shallow. They had some material *in situ*, but generally they had no perishables. Indeterminant sites are those consisting of aboriginal materials that were not *in situ*, but probably had been removed from their original location.

The next method of classifying sites was based on the types of materials and features found and what they suggested as the original use and length of occupation at the site. Utilized areas are those sites with no man-made structural features, but containing other materials; generally, these sites apparently had a

TABLE 1.—*Archaeological zones, their locations and respective square miles: M—mesa terrain, S—steppe terrain, UC—upper canyon, CD—cedar break terrain, WC—wide canyon terrain, RP—river plain.*

Zone	Location	M	S	UC	CB	WC	RP
1	Alkali Crossing						8.0
2	Higbee Valley, NE						9.0
2	Higbee Valley, SW						9.5
3	Muddy Gap						2.0
4	Ninaview		4.5				
5	Muddy Creek Head					5.0	
6	Round Prairie		3.0		1.0		
7	Rock Crossing, W					5.0	
7	Rock Crossing, E					5.5	
8	Spanish Town						9.5
9	Smith Junction						6.0
10	Lower Plum Creek, NW					5.5	
10	Lower Plum Creek, SE					4.5	
11	Red Rocks Ranch					6.0	
12	Luning Junction					1.0	
13	Cedar Pin				7.0		
14	Mid Termitin Creek			5.5			
15	Gutierrez Spring				0.5		
16	Piñon-Smith Junction, NW					3.5	
16	Piñon-Smith Junction, N					8.0	
16	Piñon-Smith Junction, S					6.0	
17	Upper Long Canyon					5.0	
18	Mort Ranch				1.5		
19	Januarys, N					7.0	
19	Januarys, S					4.5	
20	Nightmare Mesa					1.5	
21	Upper Piñon				3.5		
22	Mid Plum			4.5			
23	Upper Little Poitrey				0.5		
24	Upper Poitrey		0.5		0.5		
25	Umbart Canyon		2.5	2.5			
26	Steamboat Island, N			2.5			
26	Steamboat Island, S		1.5	5.0			
27	Cherry Canyon, N		2.5		6.0		
27	Cherry Canyon, S		1.5		0.5		
28	Moore Homestead, N				4.5		
28	Moore Homestead, S		1.0	2.0			
29	Pintaha Canyon		3.5	5.5			
30	Mustang Canyon				2.5	2.5	
31	Smith Arroyo		6.0				
32	Kim Lake		1.0				
33	Long Mesa	2.0	2.0	4.0			
34	Daleroze Mesa	8.0					
35	Maes Mesa	0.5					
36	Little Mesa	0.5					
37	Garcia Dam	0.5					
38	Velarde Ranch			0.5			
39	Sheep Pen	1.0					
40	Parker Place			4.0			

brief period of occupation. Encampments consisted of sites only with evidence of campfires and associated materials. Structured sites are those having constructed features. Human disposals are those sites with human remains; pictorial sites are those featuring rock art.

A third method of classifying sites was based on the usage of the site as suggested by materials, style and arrangement of structures, manner in which the dead were disposed of, or manner in which pictorial art was produced. Quarries are those utilized areas that were sources of materials; workshops are those areas at which materials were worked. Stone enclosures are those structured sites with enclosed masonry foundations of horizontal rocks; slab enclosures are those with vertical rocks. Stone wall sites are those with masonry walls that do not enclose completely an area. Spaced stone sites have a single layer of rocks arranged in a patterned manner, with spaces left between the individual rocks. Rings are those sites with either earthen or stone circular features or both that suggest original structures. Inhumations are those human burials beneath the original surface; coverings are those human disposals placed on the surface or in a natural cavity and covered with stone. Petroglyphs are pictorial art made by carvings in the rocks; pictographs are those painted on the surface of rocks.

The fourth classification deals with variations in the arrangement of structures and in the production of petroglyphs. The latter are produced by grinding or incising the figures on the rock or by pounding or pecking on the rock (see Table 2).

Of the 1187 sites recorded in the district, 61 fell into more than one class. For example, pictorial art comprised a subdivision of a site in 48 cases; only at 30 sites did it comprise the entire site. The limits of a site were based on the discontinuation of the distribution of cultural materials, features or structures, and topographic differentiation. If a concentration of features, structures, or materials were spaced no farther apart than 650 feet, they were considered a part of the same site unless a break in the topography intervened. If two concentrations lay 325 feet or more apart and occupied two different topographic features, such as two adjacent benches, they were considered distinct sites. This method of fine splitting did not aid in defining cultural or temporal affiliation, but it assisted in evaluating the use of the sites.

The extensive survey aided in determining the topographic and regional distribution of different types of sites, in examining variability of features within a certain type of site, and in acquiring evidence of the environmental adjustment and exploitation of the occupants of the district. The survey also added cultural materials needed to supplement the known prehistoric inventory that had been revealed by excavation. In addition to the excavated sites, 802 of the 1187 known district sites yielded some archaeological material, but seldom was the material diagnostic.

There were nine indeterminant sites, evidenced by the presence of archaeological materials, the sources for which remain unknown. Apparently, seven sites resulted from drifting material caused by erosion. Materials at another site may have been placed there by collectors. Only one site contained

TABLE 2.—Classes of sites, the number of each type and their topographic locations. First column, protective quality; second column, use or length of occupation; third column, style or manner of production; fourth column, style and production. M, mesa; S, steppe; UC, upper canyon; CB, cedar break; WC, wide canyon; RP, river plain.

Classes	M	S	UC	CB	WC	RP	Total
Indeterminant	1	1	3		1	3	9
Subsurface							
Encampment		1	1	2	1	2	7
Human disposal	1						1
Sheltered							
Encampment	3	6	89	35	62	32	227
Structure							
Stone wall	1	1	18	7	17	5	49
Slab wall			1				1
Stone enclosure					5	1	6
Human disposal							
Inhumation			2	1			3
Crevice covering			2		2		4
Pictorial							
Pictograph			1				1
Petroglyph							
Pecked			1		9	8	18
Incised			2	2	2		6
Pecked and incised					2	3	5
Surface							
Utilized area							
Quarry					2	1	3
Workshop	5	14	12	5	39	23	98
Encampment	113	38	70	34	118	45	318
Structure							
Stone enclosure							
Simple	11	1	15	10	104	29	170
Partitioned					7	2	9
Contiguous					13	5	18
Abutting	1			1	15	2	19
Abutting and contiguous					2		2
Walled	4		2	1	11	4	22
Slab enclosure							
Simple	1		1		2	3	7
Partitioned					1	2	3
Contiguous					2		2
Walled	1		3		9	3	15
Stone wall							
Barrier			1	1	1	1	4
Enclosurement					1		1
Spaced stone							
Ring	5	33	29	15	25	20	127
Spoke		1	1				2
Wheel			2		1		3
Alignment	2	4	2		2		10
Pile	2	1	2		2	2	9

TABLE 2. — *Continued.*

Ring							
Stone and earth				2			2
Earth				14			14
Earth pit		1					1
Human disposal							
Inhumation		1				1	2
Pile covering		1				1	2
Pictorial							
Pictograph			2			3	5
Petroglyph							
Pecked	5	1	2	3	15	12	38
Incised					1		1
Pecked and incised			1			3	4
Totals	56	102	268	133	473	216	1248

materials *in situ*, but the exact location of the site was not determined. The material consisted of cord-marked sherds of a Woodland pot that aided in establishing the presence of inhabitants in the district in Woodland times.

The locations of eight subsurface sites were revealed by exposed materials that lay beneath a sterile overburden of soil; but the extent of the sites could not be determined. Most material was concentrated along the exposed sides of an arroyo or the base of a blowout. Artifacts were sparse, but two sites contained a Scottsbluff point and one site contained a Folsom point. The presence of these points and the sterile overburden indicates that some of these sites are over 4000 years old. One subsurface site contained human skeletal remains.

There were 227 sheltered encampments located in rock shelters, caves, crevices, or beneath fall-off boulders; most were located in canyon terrain. The shelters were usually within 1000 yards of a source of potable water and, except in the cedar breaks, close to arable land. There were 118 sites with evidence of burning activity; fixed mortars in fall-off rocks were found at 15 sites. Most shelters lay in north-south drainages and were open to the east or west; consequently, the view was determined largely by the direction of the drainage. In the river plain, most occupied shelters faced in a west to south direction, which provided inhabitants with a southern exposure. Abundant material was found concentrated at most sheltered sites; frequently, it was found in sheet middens at the front of the shelter.

There were 56 sheltered sites with structures, most in either upper canyon terrain or wide canyon terrain, suggesting that this type of terrain may have been occupied for longer periods. On the average, the sites with structures were farther from the potable water sources than were sheltered encampments; but a greater percentage of the structured sites lay near arable land.

Shelters containing structures were somewhat larger than other occupied shelters, and most had evidence of hearths. Only five had fixed mortars. All walls were built either with sandstone blocks or slabs or both of untrimmed, uncoursed, dry-laid masonry of one or two tiers that never stood higher than 2½ feet. The majority of the walls formed no enclosures, but served as barriers;

rarely did they enclose the entire shelter. Most barrier walls were less than 20 feet in length. A variety of material appeared at these sites, but little was of diagnostic value.

Seven sheltered sites with human skeletal remains were reported from canyon regions; three were inhumed beneath the surface in rock shelters, and four were found in crevices covered with rocks. Also, there were four open sites reported to have burials. Those burials, presumed to have predated AD 1300, appeared to have been placed in a flexed position, and were not unlike those found in Woodland sites farther north in the Colorado Piedmont or Panhandle sites to the east (Krieger, 1946:46). At two sites, burials were placed within habitations, a practice common to both Panhandle and Trinidad Pueblo culture (Dick, 1963:3).

Of 78 pictorial sites found, most were located in the river plains or wide canyons. Only six pictographs were reported; all consisted of red and black figures. All sites were in zones that had high concentrations of spaced stone ring structures, which suggests some association between the two types of sites. Most petroglyphs were pecked. No scenes were depicted; instead, petroglyph sites consisted of combinations of individual elements with no definite arrangement; some were superimposed. Incised petroglyphs are grooved markings in different rocks. Locally, these are considered axe grooves that were formed when axes were ground sharp on a rock; but more than likely, they were produced for aesthetic reasons, inasmuch as many are present in the form of designs and are located high above the ground in positions inconvenient for grinding.

Few diagnostic artifacts have been found at pictorial sites. Without artifacts, descriptive scenes, and accurate means of dating, the sites have little value for interpreting the district prehistory, although some attempts have been made to do so (Campbell, 1968, 1969*b*).

All utilized areas, quarries, and workshops were found in wide canyon or river plain terrain. Few were assignable to any definite time or culture. They probably were occupied and reoccupied for short periods during many eras.

Surface encampments were distributed evenly throughout the regions and subregions; more were located wherever other types of sites were concentrated, which suggests that they were merely alternate sites frequented seasonally by residents of the other sites. More than one-fourth of the campsites were located on low terraces or benches in the canyons, but in the cedar breaks most were found in timbered areas.

Only 31 campsites covered more than an acre, and over one-third of these was located on flood plains. Large campsites often had abundant material; the smaller sites varied in their amounts. Projectile points were recovered from 26 sites.

Stone enclosures were the most common structured sites found on the Chaquaqua Plateau. Most were sites with single room structures of horizontal, untrimmed, uncoursed, dry-laid masonry. Of 170 sites, 104 were found in wide canyon terrain and 29 on river plains. Foundation walls usually were built of sandstone, but five sites in the mesas had walls of basalt boulders, and two sites

on the Purgatory River had foundations of limestone blocks. Building stone always consisted of the stone that was available immediately. Most walls were of one or two tiers and seldom over 1½ feet high. The average wall length was 11 feet, but rooms ranged in diameter from five to 28 feet. Evidence of firing rarely was detected; however, unlined, shallow-basin hearths were noted at three sites, and rock-lined firepits at three. Sheet middens were associated with most stone enclosures; but, in general, material was sparse. Of the few points found, most were late dart types or early arrow types, which suggests that most of these sites may have been occupied between AD 450 and 1300.

Nineteen enclosure sites had rooms that abutted natural rocks or escarpments. In most cases, fall-off boulders formed one or more sides of the structures. No more than four rooms were found at any site, and floor plans were circular to oval. Evidence of firing activity was noted at eight of these sites. Material, again, was sparse, but cord-marked sherds were recovered at two sites.

There were 18 sites with individual rooms that had complete foundational walls, but had been built against other complete rooms. Collectively, there were 42 rooms at these sites with 38 contiguous rooms. All the sites were in wide canyon or river plain terrain. Most rooms were circular to oval and ranged in length, or diameter, from eight to 23 feet. A rectangular room existed at one site. Material was sparse; only one point, a Fresno, was found in wide canyon terrain.

Nine sites included stone enclosures that had dividing walls separating their rooms into two units, or compartments, but no rooms were partitioned into more than two units. All these sites were in wide canyons or river plains, and topographic and construction features were similar to other stone enclosures. These sites included 21 rooms, of which 14 were partitioned.

The slab enclosures resembled stone enclosures, except that the foundational walls contained vertical slab masonry. There were 12 of these sites; seven had separate rooms, three had partitioned rooms, and two had contiguous rooms; but none abutted natural formations. Little material was found at these sites; one Catan and one Bonham point were recovered. The technique of using vertical slabs in the foundation probably occurred in the later stages of stone enclosure development.

There were 15 slab enclosure sites and 22 stone enclosure sites that contained additional stone masonry walls that apparently served as barriers. These "Indian forts," as they are known locally, were used as habitations and defensive locations. All but ten of these sites were in wide canyons and river plains; five were located in the mesas, four in the upper canyons, and one in the cedar breaks. All were near arable land. In many cases potable water may have been farther from the site than potential farmland. These were the largest sites known in the district; one covered 35 acres, and over half the sites covered at least an acre. The majority of the walls were composed of vertical slabs that usually stood two feet and sometimes four feet in height. Often the vertical slabs in the walls were reinforced or supplemented by horizontal slabs that can be three tiers in height. No walls completely encircled a site, but they did deter any easy access to it. A number of these walls paralleled one another and provided a series of

obstacles barring the approach to the habitations. As many as six successive walls have been found at one site; there were eight sites with two or more walls. The number of rooms near or enclosed by these walls varied from one at a few sites to as many as 37. Altogether the sites contained 214 rooms, or an average of five to six rooms per site. At 14 sites there were contiguous rooms, and at one site there was a partitioned room. Rooms abutting natural rock formations were found at five sites. Rooms that were contiguous with or built into the defensive walls were found at 19 sites. Some of these may have been outside the wall, whereas other individual rooms may have been outside the walls and as much as 25 feet beyond the defenses.

The defensive nature of the site is underlined by the fact that most were found on top of mesa points, tower tops, butte tops, high benches, and even huge fall-off boulders. Two or more sides of a site location often consisted of sheer drop-offs. It was in the vicinity of these forts that the highest concentrations of unfortified enclosure sites were found on lower benches and terraces. Furthermore, forts often were situated well within view of a neighboring fort. In one case, it would have been possible to relay signals from each fort for a distance of seven miles along the canyon. The unfortified sites on lower topographic features, which are within the seven-mile stretch, were all within view of one or more forts. The areal pattern suggests that the many sites were contemporaneous and, perhaps, united into a cooperative unit, or a single social group. All such clusters appeared to concentrate in winding canyon locales with barriers or bends that interrupted the direction of waterflow in the level flood plains. Not all precipitous topographic localities were occupied by fortified enclosures, only those in areas with clusters of enclosure sites and within a half-hour walk of arable land.

There were four sites in canyon and river plain regions that consisted of low, crude, barrier walls with no additional associated structures. The walls were never longer than 40 feet, but they completely barred approach to narrow, rocky mesa points that had sheer cliffs along their sides. The masonry was even cruder than that found in the average stone enclosure. Enclosed areas included no structures or features and had very little material. The presence of chipped stone rejectage at most indicates that the majority were prehistoric in origin.

There were 25 sites consisting of individual rocks or piles of rocks that were placed apart, or spaced, and formed various patterns. Material that appeared at six of these sites consisted of a few artifacts and some rejectage. Three sites referred to as wheels consisted of a full or a three-quarter circle of spaced stones. There were two sites that were referred to as spokes because they had lines of rocks radiating from a central point. Ten sites or alignments consisted of long, straight lines of rocks; in most cases, the line ascended a slight grade. There were nine spaced stone piles that consisted of conical piles of stones, numbering from one to 37 at a site; they stood two to three feet in height and had circular bases from three to eight feet in diameter. About half of the arranged spaced stone sites were located in the steppes or above upper canyons; 15 of them were within a mile of spaced stone rings. Because they were similar in construction to the

rings, often located near them, and were frequently in similar topographic regions, it is assumed that they were culturally and temporally affiliated with them.

Spaced stone rings appeared in all regions and subregions, but more were located in the steppes (33) and upper canyons bordering the steppes (28). In the steppes, 21 sites were in vegas; in the canyons, 19 were on mesa tops of flood plains. Few were near arable land, but most were either near or in possible grazing areas. Collectively, 467 individual rings were found at 127 sites. The number ranged from one to 60 at a site. Six of the 10 largest sites were located in the steppes. Rings ranged in diameter from nine to 30 feet; the average was 15 feet. Hearth materials were found at only six sites, but other archaeological materials were present at over half the sites. One site had a metal point. Altogether, the artifacts presented an odd array of material.

There were 17 sites having circles of charred soil and heated stones. All but one of these sites were located in the cedar breaks, and all but one among the timber. In general, this type of site was in an area that favored foraging activities. The sites contained from one to three of these rings with diameters ranging from 12 to 20 feet, averaging 15 feet. Two of the sites had spaced stone rings encircling them; this suggests a possible relationship with the presumed historic spaced stone rings. However, one excavated site, which was considered a midden, yielded a radiocarbon date of AD 1435 \pm 65 (Greer, 1966:64) that is too early for historic horse nomads and, perhaps, a little late for Panhandle peoples. A brief examination of another site showed that a floor of yellow clay lay four inches beneath the surface and under charred soil. No burned animal remains were found. It would appear that the ring was a winter habitation with a succession of poorly defined hearths rather than a midden. In all, material was sparse. The sites may have been occupied by a newly arrived group in the fourteenth century who subsisted primarily by foraging, used circular skin tents and spaced stone rings, and developed the earthen rings within the protected cedar breaks as winter lodges.

Most sites located and recorded in the survey individually provided insufficient evidence regarding their nature. Collectively, those sites with general similarities provided some diagnostic materials that enabled me to determine their cultural and temporal affiliation. More important, the distribution of the type of site provided clues to local environmental adjustment by their occupants.

To insure an adequate sample of material from certain types of sites, especially sites with possible Panhandle affinities, a phase of intensive surface collecting was conducted at a number of selected sites. A site was mapped and all surface material, including rejectage, was removed. The method provided little information on structural features that had not been observed superficially, but it did increase significantly the total inventory of recovered materials.

This careful survey and collection of materials was made of 19 stone and slab enclosures and one spaced stone ring site. Because of the shallowness of deposits or difficulty in excavating, sites were included in the program of intensive collecting that were not suitable for excavation. They were chosen to

illustrate the range in variety of topographical locations that were typical of such sites in the area investigated. Only two sites failed to yield satisfactory study collections. These sites and their materials have been previously described (Campbell, 1969a:254-315).

To provide an elementary chronology for the sites and materials, a second phase of field work was initiated—test excavation. Sites to be excavated were selected on the basis of their supposed potential to provide a stratigraphic sequence of materials and to augment the total amount of material recovered, in particular, perishable materials. Also, the operation was employed to solve specific problems regarding certain sites or types of sites, such as determining the existence of possible features in a structure. This phase of the study did provide an elementary chronology. Twenty sites were tested; none was completely excavated.

The types of sites best suited to fulfill these purposes were sheltered ones; of 20 sites excavated, 13 were of this type. The usual manner of excavation was first to establish a datum point, baseline, and grid system, and then to strip each grid square in arbitrary levels, completing one before proceeding with the next. At all but one site, excavation reached bedrock in at least one grid section. Following the completion of one grid section, an adjacent one was started. This procedure continued until a trench transecting the site extended from the rear to the front of the shelter. If deemed necessary, adjacent trenches were excavated, but no excavation occurred beyond the interior limits of the shelter. If features, such as walls or hearths, appeared at a site, tests were made to determine the depth and proper stratigraphic position of the feature. Extensive features, such as long walls, were never completely excavated; the depth, or vertical extent, was tested, and the horizontal extent was judged by its observable surficial evidence.

Some sites, such as stone enclosures, were investigated to determine the existence of features and, secondarily, to obtain diagnostic materials. In the excavation of a stone or slab enclosure, work was initiated by establishing a datum point, baseline, and grid system that overlaid the structure or room unit. The grid was divided into quarters, each of which extended both inside and outside the unit; excavation of a quarter resulted in an examination of features that were both interior and exterior to the unit. The excavation first removed the overburden that lay above the cultural fill and then removed the fill that lay above the floor of the structure. A subfloor test was made by putting in a test pit below the floor. The same procedure was followed in the excavation of a slab-lined cist and spaced stone piles.

Among the sheltered encampments investigated was Medina Rock Shelter, or LA 22, discovered in the summer of 1963; it was one of the more productive sites excavated. Perishable materials recovered by the discoverers indicated the possibility of a rewarding excavation. The initial excavation was conducted and reported in the autumn of 1963. A great deal of maize material was recovered, and, because of this, the site was assumed to have Southwestern connections. It was also assumed that the horticultural horizon had a time span of AD 700 to 1300 (Campbell, 1963). The 1964 project initiated excavation by reopening the site.

Medina Rock Shelter is a very large sheltered encampment located in one of the deepest parts of the Chacuaco, with relief of 800 to 900 feet. The canyon walls are terraced and consist of alternating escarpments and talus slopes. The base escarpment, which rises 100 to 150 feet above the flood plain, consists of Dockum sandstone, a brilliant red rock stained by long, dark, vertical, carbonaceous streaks. The rock shelter is located at the base of the lowest escarpment; its floor is only five feet above the flood plain. The rear wall of the shelter is formed in an arc that is 850 feet in length. A direct line from the northeast corner to the southeast corner of the rock shelter is 685 feet in length. The shelter faces the east; sunlight floods the central interior, areas A and B, from 7:00 to 10:00 AM. The rear wall slopes outward gently as it rises, producing a steep, sloping, high ceiling that overshadows an area 25 feet in width in the center of the shelter. The site falls naturally into four areas. The southern 500 feet of the site, area C, is narrow and overgrown by vegetation; there is some indication of subsurface spring activity at the rear wall. Area A lies along the north side of area C; its level floor extends 60 feet to the north. Here it is separated from area B by a rise of the floor that consists of an accumulation of talus. Area A was the most productive section, having been affected less by moisture than other sections (Fig. 3A). Area B extends for 90 feet north of area A. The concentration of archaeological materials in this section was not as great as that of area A. Area D comprises the remaining 200 feet within which a modern corral is located.

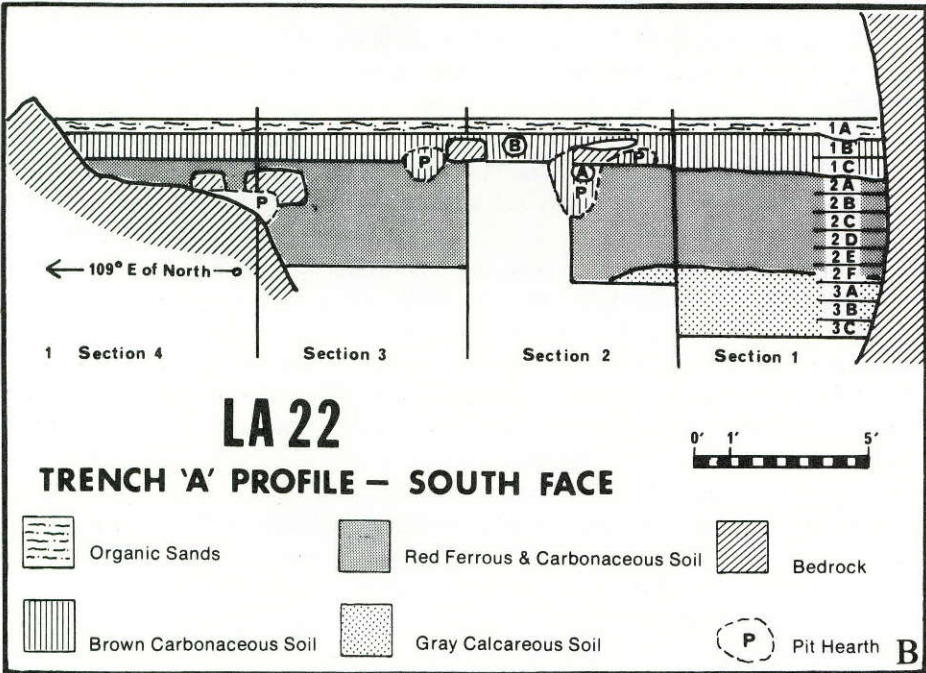
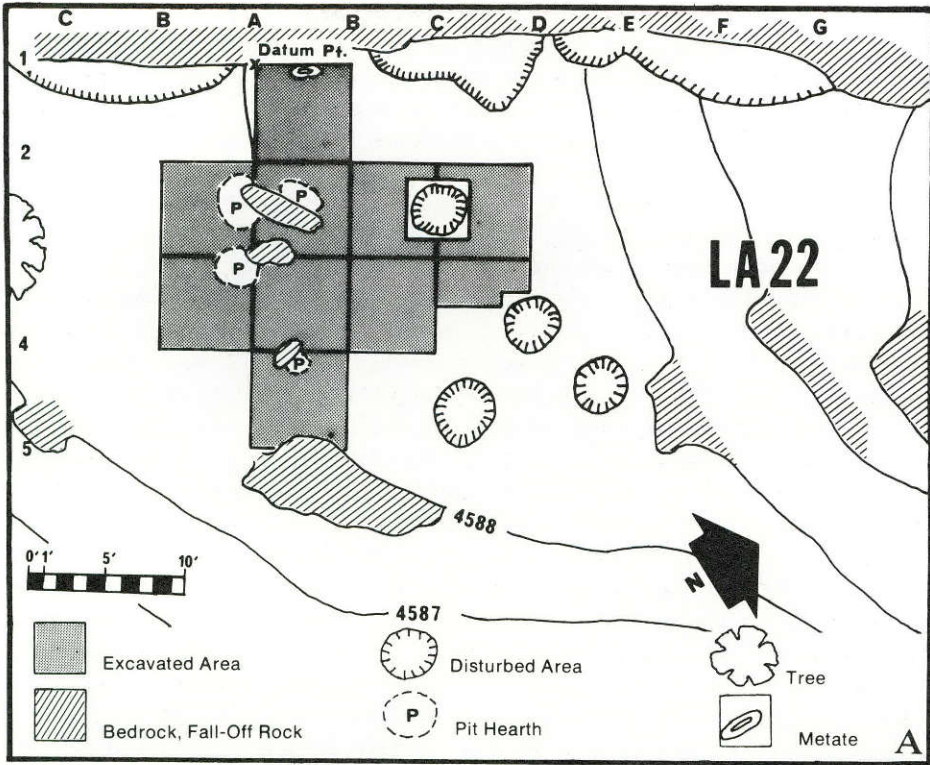
A possible stone structure exists in the north part of area C. Its outline is very irregular; it was not determined whether it was a man-made structure or a pile of talus. In area A, a few badly weathered petroglyphs were found, and additional ones were located in area B and the corral area, area D. The petroglyphs in these latter areas have deteriorated badly.

The flood plain at this point has a maximum width of $\frac{1}{4}$ mile. It is cut by a winding arroyo, which nearly always carries a running stream of water; consequently, sufficient potable water is available. Both above and below the site the canyon makes sharp bends and forms natural barriers that jam flood waters, resulting in the deposition of silt immediately to the front of the site. The silt deposits cover as much as 40 acres; the location is well suited to primitive horticultural pursuits. The flood plain and arroyo banks have a sparse cover of native grasses; trees growing below the escarpment are found only on the edge of the flood plain. On the terraces above the escarpment are appreciable growths of piñon pine and juniper. The usual local types of wildlife abound in the canyon.

Most of the excavation occurred in area A. Three stratigraphic levels were detected (Fig. 3B). The uppermost part of the top level comprised three inches of organic sands consisting of recently deposited soils and materials, such as cow dung, mixed with prehistoric materials. The level intergrades with an underlying brown carbonaceous soil that varied in depth from nine to 15 inches. This stratum contained the vast majority of cultural materials, including most of the



FIG. 3. — Area A of LA22: A, diagram of area A, radiocarbon samples dated 20 BC \pm 100; B, profile of south wall of trench A, radiocarbon samples dated AD 1135 \pm 85.



perishables. A deposit of red ferrous and carbonaceous soil containing some nonperishable cultural material underlay the top level and reached a depth of 4½ feet. Capillary action had affected adversely any perishables that this level may have held. Excavation penetrated this second stratigraphic level in only one trench. Level 3 consisted of gray calcareous soil in which no archaeological material was found. Bedrock was reached in only one section of area A.

Four problematic hearths were located beneath the surface; all adjoined naturally occurring boulders or fall-off rocks. The hearths appeared to be located at random with no patterned arrangement. A radiocarbon sample obtained from one of the hearths three inches below the top of the hearth and at the base of level 1 produced a date of 20 BC ± 100 (GaK-672). The date probably marks the beginning of the deposition of level 1 materials.

Most archaeological material was recovered from level 1 and, in particular, level 1B. Materials from the same level in all trenches and sections were assumed to have been deposited about the same time. A wide variety of perishable material and chipped stone material was recovered. Included in the chipped stone artifacts of level 1A were two Catan and one Fresno points, indicating a time range for the deposition of the level from AD 500 to 1750; but it is believed that the range was much narrower, probably AD 1150 to 1300. The next level, 1B, contained most of the cultural material; again, a large amount of perishable material was recovered that included much maize material. A radiocarbon date taken from Harinosa de Ocho corncobs provided a date of AD 1140 ± 85 (Gx-0515) for the level. The entire level probably dates between AD 750 and 1150. Level 1C provided less material than levels 1A and 1B; the material was similar except that maize decreased and bone and wild plant materials increased. With a date of 20 BC for the inception of this level, it seems fair to assign the level and most of its materials to the period between 100 BC and AD 750.

Level 2 contained very little material. However, four points, one Williams, one Ellis, one Yarbrough, and one Young, were recovered that suggest a time range of 4000 to 100 BC. Perhaps the occupation lies closer to the period between 500 and 100 BC.

The evidence from level 2 indicates that at the time of deposition, the site was frequented by a small hunting and gathering group using atlatl and dart points, hunting small game such as cottontail and prairie dog, and using the shelter for seasonal encampment. As evidenced by the presence of a hearth, the site probably served as a temporary residence where cooking or other firing activity was conducted. Accumulation of soil and fill was slow, suggesting only brief, occasional usage of the site.

In level 1C the picture differs little at the outset; the same subsistence pattern and technology are represented. However, sometime during this period the bow may have been introduced and small arrow points appeared. This probably occurred after AD 350. Perhaps about AD 750 raising maize may have been added to the subsistence activities. The great abundance of bone and wild plant materials implies that small game hunting and wild plant gathering continued to be of primary importance in the subsistence pattern of the people.

During the period of occupation of levels 1A and 1B, activity in the shelter increased, resulting in the greater accumulation of cultural material. The occupants, more than likely, continued to use the site seasonally in the late spring and summer when horticultural activities were at their peak. They were familiar with bone, stone, shell, and wood work as well as textiles; work with these materials probably had been practiced previously. There is no reason to assume a change in ethnic constitution in the populace because materials in level 1C and later levels intergrade. However, a cultural change is noted by the increased reliance on horticulture in the period from AD 750 to 1300. The absence of structures suggests that the site continued to be used only seasonally even in the late stages. Other residences probably were located nearby; neighboring stone enclosures may have been used in the winter because the rock shelter may have been rather cold during this season. The site would have been suitable for summer use; sunlight was brief and the shelter remained shaded throughout most of the day, providing a relatively cool location in an otherwise warm region. The only indication of a possible occupational break occurred between levels 1 and 2 where the sharp soil change suggests a hiatus between the levels and a period of no deposition and occupation.

Another excavated site, LA 550 or Pyeatt Rock Shelter, was similar to LA 22. It is located $\frac{3}{4}$ of a mile north of Medina, farther down the canyon, but in the same subregion, zone, township, and range. Unlike Medina, the site is located on the east side of the canyon with a view toward the northwest where sunlight reaches it for only a brief period in the afternoon. A little material was found scattered on the surface and in the upper level. The next level yielded a large quantity of material, but hardly any material appeared below this level. The types of material in all culture-bearing levels were rather homogeneous, and nearly all specimens can be duplicated by materials from levels 1A and 1B at Medina Rock Shelter. Within Pyeatt Rock Shelter the major types vary from one level to another only in the quantity of their representation.

The residents at this site appeared culturally similar to those who occupied level 1 of LA 22, Medina Rock Shelter. The absence of early dart points suggests that the occupation began somewhat later than the occupation of level 1C of Medina. About AD 350 would be a reasonable date for the inception of the use of the site. Evidence of horticultural practices appeared in middle levels, probably between AD 750 and 1000. The practice reached a peak in the upper levels, which probably dates between AD 1000 and 1150. The advantages of a nearby water source and arable land served as the major attraction of the site.

LA 815, or Tecla Mogilewicz Cave, another significant site that was tested, is a sheltered structure with a slab wall, the only sheltered site that has definite vertical, or upright, stone masonry (Fig. 4). This rock shelter lies on the west side of a small canyon that enters a larger canyon from the south. The canyon sides rise steeply for 50 feet up a talus slope above the canyon floor to the base of an escarpment of Dakota sandstone. The rock shelter lies above the talus slope and at the base of Dakota escarpment where fall-off rock has left a cavity. Both potsherds and a number of points (41 in all) were found at the site. Only five sherds of the deep cord-marked type appeared; no rims or bases were found,

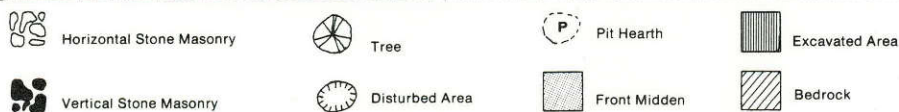
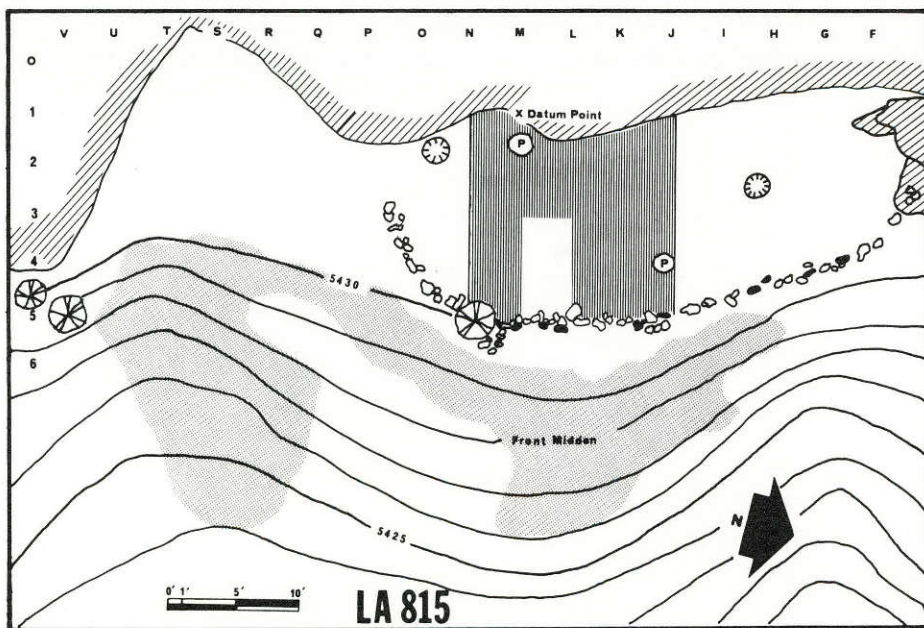


FIG. 4.—Diagram of LA 815.

indicating a continuance of a common ceramic tradition. The overlapping of point types in many levels and the similarity of the sherds and other artifacts in all levels stress the continuity of a cultural tradition at this site; it probably extended over an 800-year period. Maize originally may have been at this site and later decayed; however, it seems unlikely that the site served people during times of horticultural activity inasmuch as the immediate area offers little farmland. The rock shelter probably served as a temporary residence for people involved in foraging. Piñon nuts and deer and bison remains indicate that the site was used in the late autumn when the nuts had ripened and the deer had retreated from the higher ground farther south. The eastern exposure of the shelter would provide warmth on the chilly autumnal mornings. The presence of the wall may indicate a long occupation that continued for a six-month period, lasting from late autumn through early spring.

LA 125, or Umbart Cave, is a sheltered structure with a stone wall; in many respects the site is similar to Tecla Mogilewicz Cave. The site must have been used in the same manner as was the latter cave. Some horticulture may have been practiced, as evidenced by the recovery of beans during excavation.

LA 211, or Metate Cave, another tested sheltered structure with a stone wall, probably served as a temporary residence; its occupants were involved primarily in foraging activities. Situated far up the wide canyon, the site lies close to both cedar break and steppe terrain where hunting is good. The variety of

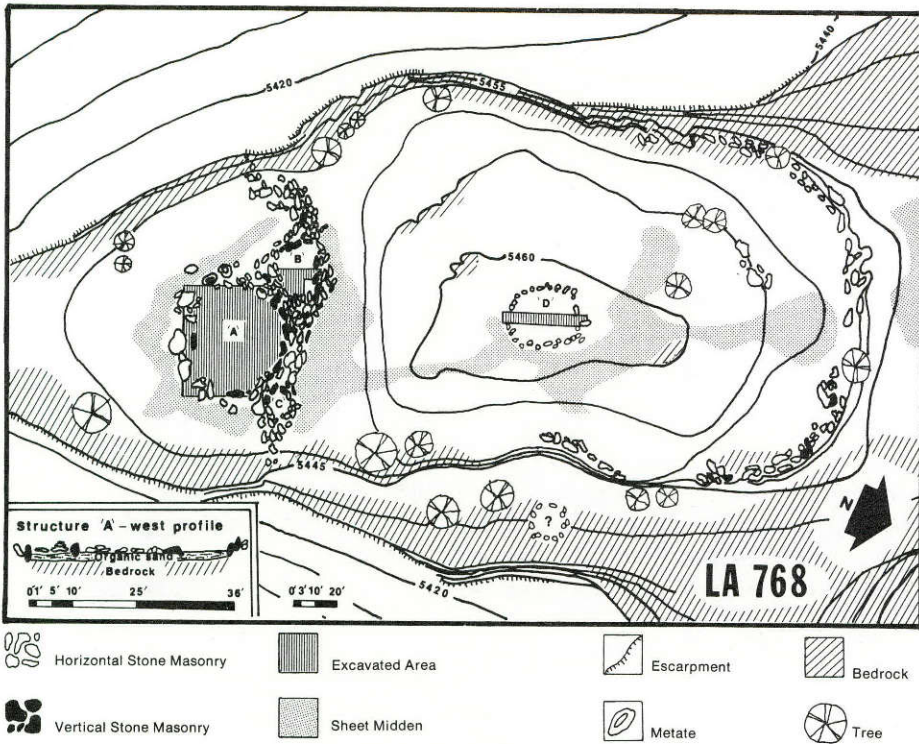


FIG. 5.—Diagram of LA 768 and profile of west wall of structure A.

animal remains clearly shows a concern with hunting. The location is convenient for conducting some horticultural activity, but such activity did not occur until the late stages of occupation of this site. Most material seems to relate to a Plains Woodland culture.

A number of other rock shelters—Line Junction shelter or LA 76, Staring Cow Cave or LA 213, Fernandez Hideaway or LA 179, Steamboat Island shelter or LA 171, and Dry Mesa shelter or LA 901—were tested and provided a little original data, but were useful primarily in that they provided correlative data with those of the previously mentioned excavated sites. By and large, they appear to have been foraging stations such as Tecla Mogilewicz and Metate caves. Details of these excavations are recorded elsewhere (Campbell, 1968:121-223).

Other excavated sites were selected because they contained masonry features. The most important such site is Steamboat Island Fort, a surface structure consisting of slab enclosures and stone barrier walls (Fig. 5). The Fort lies atop an elongated, isolated butte that is divided into two principal sections: a lower north section that rises 25 feet above the flood plain, and a longer and higher south section that rises 40 feet above the plain. A depressed area divides the two sections. This area slopes downward to the flood plain. It is through here that one can climb atop either section; approach from other directions is nearly impossible because the walls of the butte are perpendicular to the ground.

At the top of the south end of the depressed area and immediately north of the south section lies a level shelf, the Exterior Plaza, that has a thin sheet midden. Between the midden and the south section, which rises two feet above it, lies a crude stone wall that may have served as a defensive structure for inhabitants; it bars the only reasonable approach to the interior part of the site. The wall is only one tier in height, but consists of large stones. Nearly all stones appear to have been laid horizontally; the few vertical ones form no obvious pattern. The wall extends 335 feet in an arc and completely seals off all approaches.

To the south of the wall, the section slopes upward for three to four feet to form a small rise atop which are the walls of a circular structure, structure D. This consists of a low, horizontally laid, stone foundation. The Dakota sandstone slabs are untrimmed, vary in size, and are dry-laid. Only one to two tiers of stones are present, and they do not appear to have been coursed. Structure D is about 22 feet in diameter in its interior. Around this structure on the slopes of the rise is another sheet midden, the North Plaza.

East of North Plaza on a shelf that lies about four feet below its rim is another possible unit, structure E. It is not clearly defined, but appears to be a small, circular stone enclosure. South of the North Plaza rise, the site levels and another sheet midden, the Central Plaza, is located; it contains evidence of hearths.

Behind and to the south of the Central Plaza lies another defensive stone wall that extends 145 feet from the west edge to the east edge of the butte top. The wall has a number of Dakota sandstone slabs placed vertically in a line; some stand three feet high. A great number of other slabs have fallen, but some may have been placed in horizontal positions; originally, they may have buttressed the vertical slabs and reinforced the wall. Again, the building stone was of untrimmed, uncoursed, dry-laid slabs.

Within the walls are two small circular units, structure B and structure C. The former is near the west end of the wall; it has a diameter of 15 feet, and its walls are of vertically laid slabs. Structure C, in the east end of the wall, is less than 10 feet in diameter.

Along the south side of the central portion of inner wall and contiguous with it and structures B and C is the main unit, structure A. It is circular to oval with a diameter of 32 feet; the foundational wall of this room was complete and separate from the defensive wall, but it abutted the latter. Like the inner wall and its contiguous structures, the foundational wall of structure A consisted of a singular row of vertical, sandstone slabs, many of which now have fallen. Two of the slabs in the wall were slab metates. The building stone was the same type used in the other structures. Around structure A lies another thin sheet midden; it is shallow because the surface is only a few inches above the bedrock. The entire site extends over 700 feet in length and 250 feet in width.

Well-defined hearths or caches were not in evidence at this site; but the small room, structure C, may have served as a storage room. Material was fairly abundant at the site, with the largest concentration located in the fill of structure

A and the South Plaza midden. From the South Plaza and structure A, an unusually large number of potsherds were recovered. These consisted of seven smoothed, cord-marked sherds; 39 plain, coiled-ware sherds; and 12 corrugated sherds. The plain ware appears similar to that known from the Puebloid sites west of Trinidad, Colorado, and 60 miles west of this site (Dick, 1963:3). This pottery has been tentatively dated somewhere between AD 1000 and 1300.

More than likely, the South Plaza rooms served as dwellings, except for structure C; the wall was probably for defense. The proximity of arable land to this site and the knowledge of horticulture in this district at this time, the twelfth century, indicates that the site was a small village of horticulturalists, who established themselves atop the butte to protect home and farm. The North Plaza and structure D may have been in use prior to the twelfth century, perhaps between AD 800 and 1000, by people less dependent upon horticultural pursuits.

Three additional sites with stone enclosures were excavated (Campbell, 1969a:236-247); none had any additional defensive masonry features, and in most cases the architectural features and materials recovered suggested that their occupation occurred before that of LA 768.

Two excavated sites, LA 404 and LA 920, resembled each other closely in many details; both were spaced stone piles. The sites were investigated because they presumably contained burials; however, none of the piles contained anything other than rock. An examination and comparison of LA 920 with a nearby spaced stone ring site, LA 426, suggested that they share a common cultural and temporal position. Very likely, the piles are associated in some way with the ceremonial life of historic plains Indians.

One other site, LA 90, was investigated briefly. It appeared to contain a shallow, rock-lined cist three feet in diameter and one foot in depth. The cist was cleared, but no material or other evidence of its nature was found.

Many of the usual problems besetting excavations were encountered during this field project. In interpreting the temporal and cultural aspects, much reliance was placed on the presence or absence of certain types of material; however, none of the sites was excavated completely. Additional excavation may have recovered some materials that presently are unknown at a site, thus altering the conclusions reached in regard to a particular site. But, the absence of certain types of points is interpreted as meaning that they were not present at all. The point types that were recovered are relatively similar and consistent within many sites with the same characteristics.

The interpretation of the stratigraphy from the absence or presence of point types from sheltered sites is complicated further by three factors. First, there is a scarcity of radiocarbon dates to aid in determining the exact time ranges of various points; the few radiocarbon dates available now are only suggestive, but in most cases they do approximate the previously assigned dates. Second, intrusion of alien materials and disturbance of the stratigraphy by natural or human agencies are possibilities. Surface collections from enclosures may contain intermixed materials from subsequent horizons, and all the shelters displayed some evidence of rodent activity; a number of shelters had been

worked previously by amateurs. Third, the types used for dating were defined in other areas; their dates, affiliations, and descriptions may not be applicable fully to this district.

Regardless of these problems and in the absence of better evidence, with certain reservations, the types of points were assumed to be final proof of the temporal range of certain strata and sites.

MATERIALS RECOVERED

Approximately 26,000 archaeological objects were recovered or reported from sites known to or located by the field project. However, nearly 85 per cent of the total amount consisted of plant remains, bone, and either chipped stone wastage or rejectage or both. The remainder, about 15 per cent, consisted of deliberately fashioned artifacts.

The material was categorized, enabling a rapid summary of quantity and quality of types by site level, site, site type, and region, and permitting assessment of the possible temporal and regional variation in technology. The major categories were based on source material (such as vegetable, animal, mineral, or chemically altered mineral), manufacturing potential of the material (such as flexible, inflexible, highly resistant, dense, or granular), and degree of knowledge concerning its use (such as artifact of known use, worked or prepared materials of unknown use, or rejectage or wastage of no known use). The classification was based on that used by Kidder (1932) at Pecos ruin; but modifications were made to suit the needs of the local industries, which were often culturally distinct from those at Pecos. Twenty major classes and 89 subclasses of material were described. The subclasses were based on the use or degree of sophistication of manufacture of the artifacts; method of manufacture or working on the prepared materials; or type of raw materials, species, or parts of species found among the wastage or rejectage. Subclasses were subdivided on the basis of variety or form of the artifacts. A further subdivision dealing with the condition of the artifacts, such as complete, fragmented, or questionable, was employed sometimes.

The major class of inflexible plant artifacts was reported from only four sites; it consisted of only three subclasses of artifacts: firedrills, arrowshafts, and digging sticks. Prepared, inflexible plant material consisted of a frayed-end shaft stick, smoothed shaft sticks, a shaft stick with clay daub attached, a shaft stick enwrapped by a vine, and a pointed shaft that was less than a foot long. Inflexible plant wastage was removed from two additional sites.

Woven material included all artifacts made of flexible plant material; they appeared in a few dry, sheltered encampments. Two basketry fragments were made by twining. Matting is represented by one fragment made by the same method employed in the basketry. There were pieces of two ply or double strand, S-twist or counterclockwise, bound strings and pieces of two ply string that were Z-twist or bound clockwise. Prepared flexible plant materials consisted of square knots of yucca strands and four tied bundles of yucca leaves.

The most significant material from the class of vegetable foodstuffs was maize; it established the presence of domesticated plants within the sites. The majority came from just two sites, LA 22 and LA 550. The fragments included cobs, kernels, stalk-phragmites, shanks, husks, and leaves. The presence of many different parts of this plant substantiates that it was grown locally. The maize material, analyzed by Walton C. Galinat (Galinat and Campbell, 1968) consisted of four identified varieties: Harinosa de Ocho, Pima-Papago, Fremont Dent, and Chapalote Reventador.

Another domesticated plant, beans, appeared at two sites. Gourds, another possible cultivated plant, were present in large quantities. Chokeycherry and wild plum pits, piñon nuts, and cactus seeds were recovered, all of which indicate some reliance on wild plant foods by local prehistoric peoples. Some unidentified seeds and grasses also were found. In addition, yucca quids appeared at some sites.

The major class of bone artifacts contained only two subclasses of material, splinter bone awls and tubular bone beads. In general, most of the awls were made from ground and sharpened fragments of large mammal limb bones. Beads usually were made from limb bones of small mammals. Prepared bone materials consisted largely of limb bones of various mammals. They consisted of cut; cut and polished; cut, polished, and notched or incised; polished; polished and notched; notched; and bifacially notched specimens. There were 3239 fragments of bone recovered from all sites. Of these, 1178 were from unidentified small mammals, 1320 from unidentified large mammals, and 199 from miscellaneous unidentified mammals. Of the species identified, by far the greatest representation was by cottontail rabbit (*Sylvilagus audubonii*) and prairie dog (*Cynomys ludovicianus*).

Shell artifacts consisted largely of ornaments—two pendants and three shell beads, one of olivella and the remainder of freshwater mollusks. All had been cut, polished, and perforated. Prepared shells included fragments of cut, incised and polished, and perforated specimens. Shell wastage of olivella shell, freshwater mollusks, and unidentified fragments also appeared. In addition, claws of crayfish were found at two sheltered sites. No remains of fish were found.

There were no artifacts of horn, antler, claw, or teeth recovered. Only one dental fragment appears to have been prepared; this specimen from an undetermined species had been cut, but its use is unknown. Artifacts of perishable animal materials included one leather strap and three fragments of rabbit fur cordage.

Over 604 items of either ground or pecked stone artifacts or both, prepared materials, or rejectage were reported from the district sites. The most frequently encountered materials were manos, or hand stones, most of the loaf variety. Metates were the next most common ground stone artifacts. They were crude but relatively uniform and of the slab variety. At 22 sites, a number of bedrock or fixed mortars were found in or near the sites. Other ground stone tools consisted of hammerstones, polishers, rubbing stones, shaft smoothers, ground slabs, ground cores, a paint bowl, pipes, ornaments, and a maul.

The chipped stone industry provided the vast majority of archaeological material recovered and reported from the field. Nearly 1500 artifacts, 1700 utilized objects, and over 17,000 pieces of rejectage were examined and classified. In the artifact class, the materials were subdivided first on the basis of the amount and place of secondary chipping activity, then, on the form or shape of the artifact produced, and finally, on the style or previously recognized type of this form.

With the exception of projectile points, all other multifacially and bifacially flaked pointed, artifacts were classed as triangulates. There were 88 made from flakes and one from a crudely worked core. They included forms that were leaf-shaped, diamond, straight-stemmed, and single-notched. Presumably, they all were used as knives. Another group of multifacial or bifacial artifacts were circular to oval in form; there were 41 of these. There were 11 half-circular or semiovate multifacials. Rectangular blades and a number of bifacial specimens that tended to have little or no symmetry of form also occurred.

Large cores that displayed bifacial flaking along one or more sides were recovered; these heavy implements were classed as handaxes. Some large cores had edges flaked with spaced flaking on each side; the intermediary unflaked spaces were flaked on the opposite side, or face, producing a sinuous, sharp edge. They are similar to the handaxes but are classified as choppers. Presumably, they were used for hacking rather than slicing.

There were specimens with unworked bases and bifacially worked proximal protrusions. The ends of the protrusions were squared but sharp, having had a top and bottom flake removed to produce a long, sharp edge; they are referred to as gravers. Drills were artifacts with flakes removed on three, four, or all faces and with cross sections that were circular, diamond, or triangular; the blades were elongated and tapered to a point. A number of different types were represented, many of which are known elsewhere (Kidder, 1932:24-29). There were tapering flange, small flange, square flange, straight shafts, no flange, tapering shaft with no flange, small sharp shaft, and nonflanged shaft with expanding midsection types. There were 11 fragments of bits, or shafts, recovered, along with a fragment of a drill that had barbs, or had been notched for shafting; this was of the cross flange type.

Among the unifacial artifacts, or those secondarily flaked on only one face, there were triangulates from flakes, ovates from flakes and cores, semiovates from flakes, blades from flakes, and asymmetricals from flakes and cores. There were two unifacial choppers, two handaxes, and one graver.

There were a large number of unifacial, thick, plano-convex type artifacts with flaking on their minor surfaces, or convex edges, and scars of utilization on their plane surfaces. Of these minor facial artifacts, or scrapers, there were small end-scrapers, large end-scrapers, triangular-shaped scrapers, and snub-nosed scrapers. Occasionally flat flakes, cores, or knives showed some steep retouch or flaking and utilization on one side; these were classed as flake scrapers, core scrapers, or scraper knives. One small flake with a concave edge showed steep retouch; it may have been used for smoothing circular objects, such as arrow-shafts.

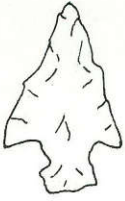
A large number of flakes that were not secondarily flaked had been used; this is evidenced by scoring on their surfaces or serration along their edges. Their true use is unknown. Nonutilized flakes and cores comprised nearly 65 per cent of all recovered material. Most of this rejectage consisted of quartzite or cryptocrystalline quartz. Another common material was a local form of agate. Chert, basalt, jasper, quartz, and dolomitic limestone also was used. Among the rejectage were small amounts of petrified wood, sandstone, and shale. All this material was obtained locally. However, some materials obviously came from beyond the district. Alibates "flint," or agatized dolomite, from the Texas panhandle constituted a minor part of the rejectage. Obsidian, presumably from the Southwest, and a flint that might be a Medicine Creek variety from the Central Plains were recovered also.

The form of most interest in this study consisted of flat, bifacial, pointed artifacts, presumably all projectile points. Nearly 470 whole or fragmented specimens of this form either were recovered or reported or both, and types for 404 of these could be recognized. Projectile points were determined principally on the basis of *Guide to the Identification of Certain American Indian Projectile Points* (Bell, 1958, 1960) because of the proximity of this district to areas in which most of Bell's types were defined and because his guide covers more area and more types of points than most other works. However, one type, the Cuney, was identified from another source (Suhm and Jelks, 1962), and some types were checked in Steege and Welch (1966) to establish more accurately their temporal and areal ranges.

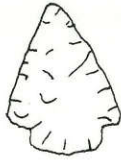
The local points can be grouped into two general categories based on size: dart points, or those types that usually exceed 1½ inches in length; and arrow points, or those less than 1½ inches in length. A group of 24 untyped points had a sufficient number of attributes in common to warrant a distinct typing; they are referred to as Chaquaqua points. Among the recovered and reported points were 13 that have probably Paleoindian affiliations. There were some points that did not fit readily into previously established types. The major distinction of dart points of the Chaquaqua district from those mentioned for other areas is the higher frequency of straight bases in this area. The arrow point types may be grouped into three unstemmed types, five notched types, and five side-notched types (Fig. 6). Details of all types recovered were discussed by Campbell (1969b:96-107).

Ceramic material in this district is rare if compared with adjacent areas. Most specimens consisted of fired pottery, but bits of unfired clay were recovered from two sites. At one site, the unfired clay material consisted of pieces of clay with stick and brush impressions; it may have been mortar from a wattle and daub structure. At the other site the unfired clay consisted of a fragment with corncob or mat impressions.

All baked clay materials consisted of potsherds. Over 479 were recovered from 52 sites. Of these, 316 were of rough cord-marked sherds collected at 37 sites. There were 38 sherds of smoothed, or slipped, cord-marked ware found at nine sites. Corrugated ware appeared at two sites. This pottery was associated with the plain ware; both are probably



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4



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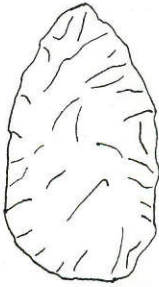
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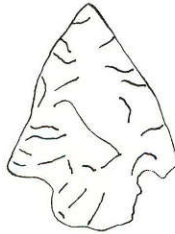
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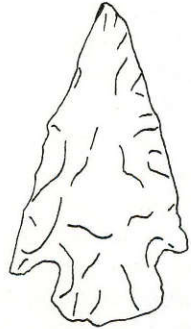
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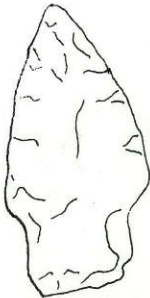
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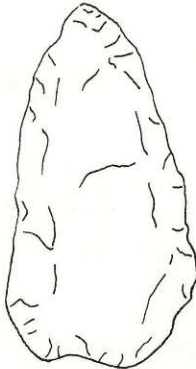
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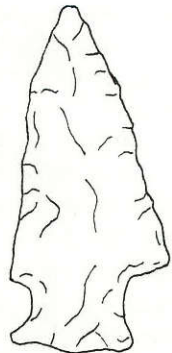
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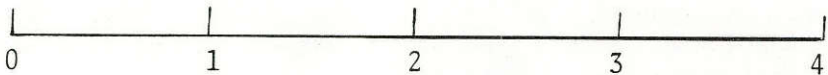
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14



Puebloid types. A minor amount of another type of pottery occurred at 10 sites in the district. Few large sherds were recovered and, consequently, their description is more limited and tentative than for the other ware. They had interior swells that indicate the use of the paddle and anvil method of manufacture; the temper is heavily micaceous. This type is probably the micaceous ware attributed to the Dismal River aspect, the protohistoric plains Apaches (Champe, 1949:288; J. Gunnerson, 1960:161). It is also possible that it is the type referred to as Taos Micaceous, a Pueblo ware (Ellis and Brody, 1963:316); but the sherds from this district have not been found associated with other Pueblo pottery artifacts.

Metallic materials that obviously consist of artifacts used only in the historic period also appeared. Occasionally nails and cartridges occurred on surfaces of sites, but these were considered to represent Euro-American intrusion, notwithstanding the fact that aboriginal Indians may have used them. The only metal implements considered to be of probable aboriginal use were metal points. About six specimens were reported from four sites. No association with any particular historic group can be made, but their presence offers assistance in determining the temporal position of certain types of sites.

An incomplete skeleton of one individual was acquired by members of the field project. The burial was removed hastily by amateurs when it was exposed by a flash flood. The remains and notes on its position, orientation, and stratigraphic position were donated to the project. No cultural material was found in association with it at this site, LA 919. The position and orientation as well as the absence of associated cultural materials fit with descriptions for Woodland burials and a sixteenth century burial from eastern Colorado.

Besides the recovered or reported materials of known provenience, a series of other artifacts from sites of unknown location has been noted in publications or collections from this district. Also there have been materials reported from adjacent areas that have not been found locally; however, they have been recovered at sites similar to those in the southeastern district.

Among the items reported for the region were painted and sinew-wrapped sticks found on the lower Purgatory (Wedel, 1964:151). Painted sticks, reputedly from rock shelters in the cedar breaks of the district, have been seen in private collections. Their use is unknown, but locally they are referred to as prayer sticks. Spoons from a rock shelter near the Purgatory have been reported but not described (Robb, 1942:19). Woven sandals of yucca have been recovered from a rock shelter on Trinchera Creek (*Rocky Mountain News*, 1955; Trinidad State Junior College Museum).

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 FIG. 6. — Arrow projectile point types: 1, Bonham; 2, Alba; 3, Scallorn; 4, Fresno; 5, Reed; 6, Washitaw; 7, Chaquaqua; 8, Young; 9, Catan; 10, Ellis; 11, Marcos; 12, Trinity; 13, Abasolo; 14, Yarbrough. Scale in inches.

In the Cucharas drainage, sites have yielded coiled basketry with black and red paint designs (Morris and Burgh, 1941:52). Among the bone rejectage removed from one rock shelter were the remains of pronghorn (Robb, 1942:19); this species has not been identified positively in any of the district sites. Squirrel-skin bags (Chase and Stigler, 1949) and leather sandals (Trinidad State Junior College Museum) have been removed from rock shelters in or near the district. An asphalt ball appeared in one rock shelter (Robb, 1942:19). So-called "Pueblo" metates have been recorded for the area (Tatum, 1944a:25-26). Among the curiosities that have appeared in the district are stone figures (Dondelinger and Tatum, 1944) and clay figurines (*Rocky Mountain News*, 1955). A number of Folsom and "Yuma" points have appeared in private collections made along the Purgatory (Wedel, 1939:284).

Pottery has been mentioned frequently for the area, but practically the only types from this or adjacent areas that have not been mentioned are Woodland and Borger cord-marked. Upper Republican pottery has been noted in the area (Nelson, 1967:78), and rim types of this ware have been exhibited in the Trinidad State Junior College Museum. The rims are thickened and incised, but not necessarily collared; consequently, they may be more in line with types from the Optima focus. However, one exhibited rim has incised hachures typical of Upper Republican ware. Pueblo pottery was reported from six sites (Nelson, 1967:78; Tatum, 1944b:25-26), but the type is not specified. In the Arkansas River Valley, Great Bend pottery has been reported from one locality (Nelson, 1966:85, 1967:78).

Glass beads of the historic period have been found associated with aboriginal materials (Tatum and Dondelinger, 1945:14), and some specimens have been seen in collections made from sites located in the upper Two Buttes Creek drainage.

CHRONOLOGY

To determine the origin of cultural materials, their cause and effect relationship, or their temporal or sequential order, it is necessary to draw upon the few but varied sources of relative or absolute dates available for the materials within the district. No one excavated site produced a clear stratigraphic sequence for all late Prehistoric and Early Historic horizons. Diagnostic materials seldom appeared in sufficient quantity in successive levels to enable seriation of such remains. Due to the transient nature of the occupants of most sites, the inventory of artifacts never was represented completely in any one level; some ceramic horizon components contained sherds, some did not. However, by matching levels or components with similar diagnostic materials from different sites, it was possible to group artifacts of the same horizon and enlarge the known inventory. The few radiocarbon dates from the district provided some dates for the occurrence of diagnostic materials or traits and associated materials, and aided in developing a chronological scheme.

In the absence of radiocarbon dates for certain local materials, dates obtained for similar materials in districts adjacent to the Southeast Chaquaqua Plateau were employed, with some reservations, in the development of the chronological scheme. Justification for the use of dates from other areas required a demonstration of a relationship of the materials and events of the different districts.

The earliest radiocarbon date from the district, 20 BC \pm 100 (GaK-672), was obtained from a charcoal sample taken from a fire pit in Medina Rock Shelter. The fire pit appeared to be associated with Late Archaic (post-Altithermal times, 1000 BC to AD 100) projectile points and associated materials. Radiocarbon dates obtained for Late Archaic materials at the Battle Canyon site in northeast Colorado indicate that these materials persisted in the high western plains of Colorado until at least 5 BC \pm 95 (Breternitz and Wood, 1965:5).

The earliest Plains Woodland materials on the Chaquaqua Plateau are dated at AD 270 \pm 95 (GX-0718). They appeared at Metate Cave and consisted of cord-marked potsherds associated with dart points; corner-notched arrow points of the Scallorn type were found above this level. A radiocarbon date of AD 450 \pm 55 for the Graneros site in the vicinity of Pueblo, Colorado, indicates that small, triangular, corner-notched points and dry-laid, horizontally placed stone masonry foundations had appeared in southeastern Colorado by the fifth century. A compromise date lying between the dates from Metate Cave and Graneros of AD 350 for the adoption of corner-notched points in southeastern Colorado is, perhaps, reasonably close. It postdates the same types farther north (Breternitz and Wood, 1965:5-6), but predates their appearance in the Southwest (Worthington, 1951:70) and the Southern Plains (Bell, 1960:84).

A transitional stage between Plains Woodland and Upper Republican has been dated by radiocarbon samples at AD 740 \pm 220 in northeastern Colorado (Breternitz and Wood, 1965:5) and at AD 1050 \pm 250 (W-1018) in the Denver Basin (Deevey *et al.*, 1965:132). The material complex, the Franktown focus, known from Cliff Swallow Cave in the Denver Basin, included cord-marked, conoidal pots and side-notched points of the Washita and Harrell types (Morton, 1954:35-40). Similar material probably appeared on the Chaquaqua Plateau at this time, about AD 900 to 1050.

The presence of maize in LA 22 dated at AD 1140 \pm 85 and at LA 550, or Pyeatt Rock Shelter dated at AD 1135 \pm 125 (GX-0514), attests to the presence of horticulture in the district by the twelfth century at the latest. The radiocarbon date of AD 1175 \pm 85 (GX-0719) for LA 768, Steamboat Island Fort, indicates that people occupying fortified slab enclosures were residing in the area during this farming stage and, no doubt, were responsible for farming. This also places circular, slab-lined structures, contiguous rooms, and fortification walls in the district by the twelfth century.

Occupation continued on the Chaquaqua Plateau into the fourteenth century, judging from a radiocarbon date of AD 1360 \pm 110 (GX-0717) from LA 125, or Umbart Cave. The date is associated with rough, cord-marked ware that is similar to Upper Republican wares of northeastern Colorado.

A radiocarbon date of AD 1435 \pm 65 (TX-290) from an earth ring at the Loudon site (Greer, 1966:64) shows that these sites were in use by the fifteenth century on the Chaquagua Plateau by descendants of people who made or acquired the rough, cord-marked ware in the previous century or by a new group of immigrants.

A burial of a 22-year-old brachycephalic woman from the Oman-Chubbock site in the Colorado Piedmont, just north of the southeastern district, provided two radiocarbon dates, AD 1530 \pm 80 and AD 1550 \pm 95. The burial was a flexed, pit burial presumed to be related to Upper Republican culture (Tipton, 1967:14-20). However, the head form was a marked departure from the usual dolichocephalic type of the Late Prehistoric Plains; it closely resembles the Deneid variety that characterizes, among others, most Southwestern Apaches (Neumann, 1952:27-29). By coincidence, in 1541 the Coronado expedition encountered Apaches in northwest Texas and within 100 miles of the Chaquagua Plateau and Colorado Piedmont (Schroeder, 1962:6). The corroborating evidence seems to suggest either a physical or population change or both in the Plains in post-fourteenth century times. However, one burial is hardly an adequate sample of a population; furthermore, other than the cephalic index of the burial, none of its other indices is significantly different from those that characterize other varieties. It may be added also that nothing is known of protohistoric Plains Apache burials (J. Gunnerson, 1960:251).

No additional dates have been obtained for southeastern Colorado. However, a late eighteenth century date has been acquired for a spaced stone ring (tipi ring) in northeastern Colorado. The date suggests a late period for at least some spaced stone ring sites in eastern Colorado.

The few radiocarbon dates from the southeastern district do not date the occurrence of all changes of diagnostic traits and associated material. No dates are available for the period between AD 270 and 1135; but material appears in levels overlying the early date and indicates that occupation and changes occurred during this long period. Radiocarbon dates from adjacent areas suggest approximate times for some of the changes.

Projectile point types from adjacent areas that have known time ranges provide a means of dating similar local types and other materials that are associated with them. However, time ranges for some local types have been revised in light of associated radiocarbon dates; but none of the revised time ranges differs greatly from previously suggested dates in other areas. In some cases, new dates for a local point type result from a compromise between different time ranges that have been applied in different areas lying in opposite directions from the Chaquagua Plateau.

The revised time range for the type of point that dominated at a site or site level was the chief means of dating the site or level. Although a certain point type is dominant at a certain period, it is understood that the type is not necessarily the one most frequently recovered from most sites of this period. Nonetheless, sites or levels with similar point complexes are considered coeval, and they, with associated materials, characterize the horizon. Small samples of material from

some sites, or for even a horizon, may be misleading; but until further evidence is produced through additional field work, it will be assumed that their present proposed range of occurrence is correct.

The Yarbrough and Williams dart points appeared in the area before 20 BC, and probably as early as 500 BC, if not earlier. They declined in number during the post-Christian era and no longer were produced after AD 270 or perhaps AD 200. Other dart points, such as Ellis, Marshall, Ensor, Marcos, and Edgewood, appeared along with Yarbrough, but survived until sometime after AD 1000. At no time were they the most common form. The Catan type probably appeared after 100 BC and certainly before AD 270. It was common until AD 1300 or 1450 and was the prevailing type between AD 100 and 350. Small, triangular, corner-notched arrowpoints, such as the Scallorn and Bonham, appeared between AD 270 and 450, or around 350, and remained more popular than all other types until the AD 1000 to 1150 period when they were superseded in number but not replaced by small triangular, side-notched varieties. The later side-notched points, such as the Washita, Reed, or Harrell types, were found as early as AD 800, but did not become popular until after AD 1000 when they became predominant. The unnotched and unstemmed points, Fresno and Chaquaqua, were found about AD 800 and persisted well into historic times. They were never a dominant form; these points were most common around AD 900.

The small amount of ceramic material from the district provides some clues regarding the age of certain sites and associated materials. However, due to the limited quantity, the small size of the sherds, and the few varieties of types, pottery alone is not a satisfactory diagnostic trait.

Woodland cord-marked ware, or deep cord-marked, was present in the area as is proven by the presence at LA 1 of a fragmented conoidal-based sherd with deep and wide cord-marks. No other basal sherds of cord-marked ware were noted during the project, but deep cord-marked body sherds were found at LA 211; they have been dated at AD 270. Woodland cord-marked ware probably appeared no earlier than AD 250 and persisted until AD 900-1000 when it was replaced by transitional types or Borger cord-marked ware. Rim sherds of globular jars of Borger cord-marked have been found at three sites on the Chaquaqua Plateau, LA 761, OT-79, and LA 921. The slipped and polished cord-marked sherds appeared at one sheltered encampment and at a number of fortified stone enclosure sites, but not at LA 768. It is assumed that slipped ware appeared after the shallow cord-marked ware was introduced; it probably occurred after AD 1175.

Thin, micaceous-tempered ware has been associated with the Dismal River aspect; it is assumed to date around AD 1750 (Wedel, 1964:114). A similar type of ware was produced at Taos Pueblo after AD 1550 (Ellis and Brody, 1963:316). Taos micaceous ware may have served as the source of influence for the development of Dismal River micaceous. If so, the latter type of ware probably occurred no earlier than AD 1550; it may have continued in use in the district until AD 1750.

Dated types of Pueblo trade ware have been reported from a number of sites in southeastern Colorado. Sherds were recovered at three stone enclosures in the Cucharas drainage. They consisted of Indented Coiled, Chaco 2 (Taos Black-on-White), and Wiyo Black-on-White types that date between AD 1000 and 1300 (Renaud and Chatin, 1943:55-57). Santa Fe or Taos Black-on-White has been found associated with stone enclosure sites on the Apishapa River, placing the occupation of these sites sometime around AD 1300 (Withers, 1954:4, 1964:3). At LA 768 on the Chaquaqua Plateau, Sopris Plain ware, a contemporary of Taos Black-on-White (Baker, 1964*b*), has been recovered.

Maize also provides some tentative dates for sites at which it is found. The specimens from two local sites that have been radiocarbon dated consist of a variety known as *Harinosa de Ocho*. The variety originated in South America and diffused to northern Chihuahua, Mexico, around AD 750 ± 250. From here it diffused into the Southwest (Mangelsdorf and Lister, 1956:175-176). *Harinosa de Ocho* adapts well to high and dry climates, such as the transition zone of the Southwest; consequently, it is associated with Pueblo II expansion, AD 900-1050 (Galinat and Gunnerson, 1963:122), and possibly with the appearance of horticulture in the canyons of the Chaquaqua Plateau. Purebred *Harinosa de Ocho* probably entered the district about AD 900, or before admixture with other varieties had occurred; hybrid *Harinosa de Ocho*, which comprises most of the maize from the district, probably appeared later, about AD 1050. Very likely, Pima-Papago and Fremont Dent appeared at about the same time as hybrid *Harinosa de Ocho*. All these varieties constituted a part of the "Mexican Complex," but not the "Eastern Complex," which is known from areas in the eastern United States (Newell and Krieger, 1949:146). Consequently, it can be assumed that horticultural materials and, perhaps, some horticultural practices on the Chaquaqua Plateau district were derived from the Southwest.

Another variety, *Chapalote-Reventador*, appears to be related to varieties that were prevalent in the Southwest prior to AD 700 (Galinat and Gunnerson, 1963:119); it may be associated with the Basketmaker Complex, which is considered the type of maize for Southwestern Basketmaker, Plains Woodland, Hopewell (Galinat and Gunnerson, 1963:118-119, 131-132), and Ozark Bluff Dweller cultures (Newell and Krieger, 1949:242). The type appeared in the Southwest about 300 BC (Mangelsdorf and Lister, 1956:175-176), but presumably did not reach the western plains until much later (Galinat and Campbell, 1967).

There are a few other diagnostic traits in collections from the district that can assist in determining the age of associated materials. The digging stick may belong in the horticultural stage, or postdating AD 750. Metal points are uncommon, but the few that have been found were in or near spaced stone ring sites in the steppes and probably postdate AD 1750 times (Baker and Campbell, 1959).

Some types of structures have been dated and, with limitations, were used to date associated materials. Circular, horizontally placed, dry-laid, crude stone foundational walls appear by AD 450 (Breternitz and Wood, 1965:5) and the circular, vertically placed, dry-laid, crude stone foundational walls probably

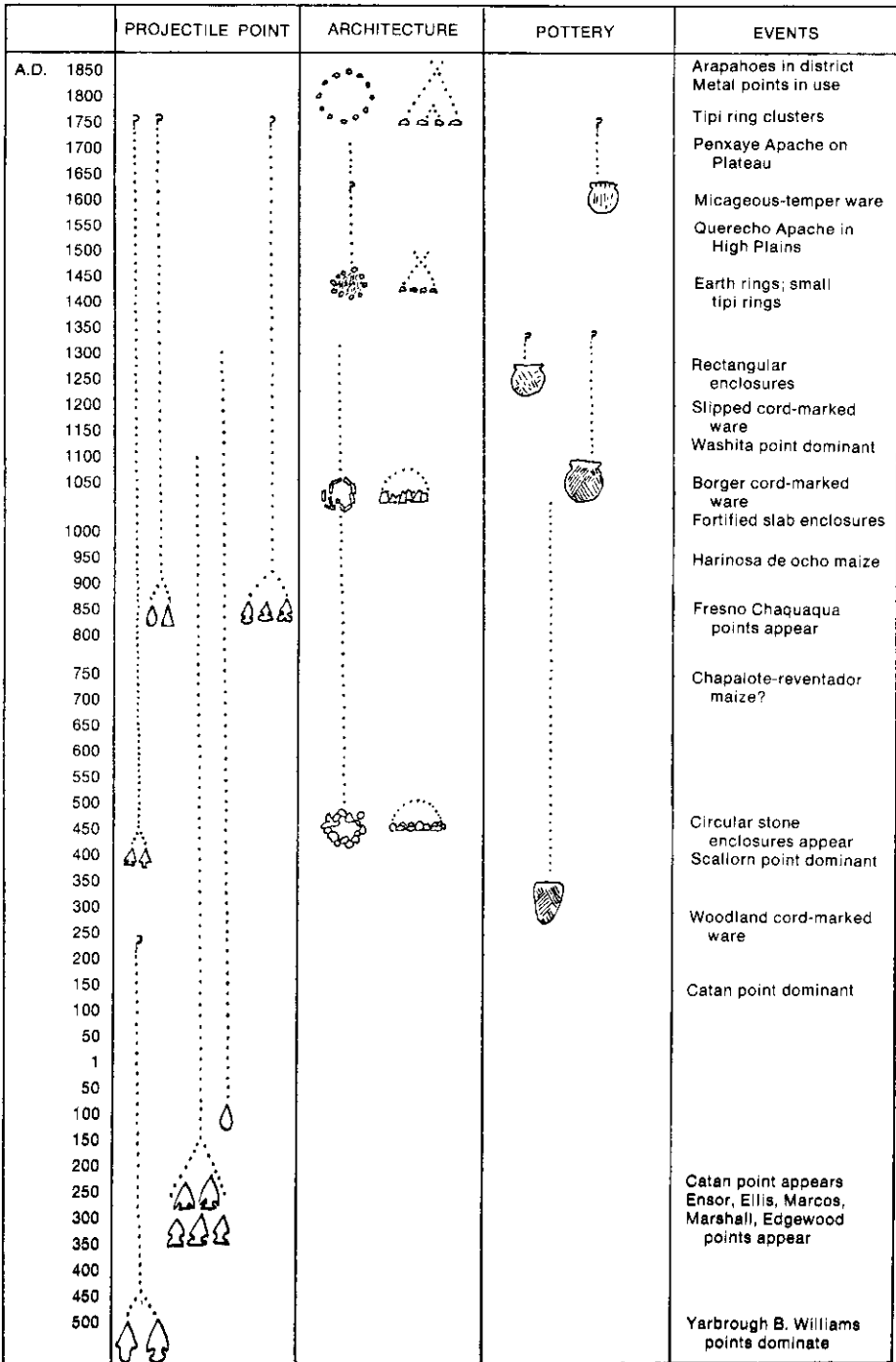


FIG. 7.—Changes and time ranges of diagnostic materials on the Chaquaqua Plateau.

existed by AD 1000, or at least by 1175. Earth rings, either habitations or middens, appeared by AD 1435 and perhaps some small, isolated spaced stone rings are coeval. Larger concentrations of spaced stone rings in more open terrain probably appeared after AD 1750.

A summary of the diagnostic traits, the approximate time of their appearance, and the span of their existence aids in determining the major periods of changes, or horizons, on the Chaquaqua Plateau (Fig. 7). Prior to AD 200, Archaic points dominated the scene on the Plateau, but between AD 200 and 450 there was some change in point types, and stone enclosures and pottery appeared; this led to a Plains Woodland horizon. After AD 450 there was little change until AD 750, when maize horticulture seems to have been added to the subsistence base. Between AD 750 and 1000, Apishapa focus, or pre-Antelope Creek focus appeared with slab enclosures, side-notched points, and globular pots, but by AD 1300 most of the traits disappeared only to be replaced by a simpler complex in the fourteenth and fifteenth centuries. Sometime after AD 1550, Dismal River pottery appeared in the area, and after AD 1750 historic horse nomad materials prevailed until the late nineteenth century.

CHAQUAQUA PLATEAU CULTURAL HISTORY

EARLY HORIZONS ON THE CHAQUAQUA PLATEAU

Little attention was given in this study to materials that were assumed to have been derived from various horizons that predate AD 450, Late Prehistoric times. However, brief mention will be made of the few representative artifacts of these early horizons.

Only one site, LA 756, contained material that may be of Llano Complex derivation, a Clovis fluted point. Other reported materials from the site seemed to be associated with later horizons; the point may be intrusive or the site may contain more than one level or component. Nothing conclusive can be said about the artifact inventory, inasmuch as it is questionable what artifacts are associated with which possible component. LA 756 is in a vega in open steppeland (Campbell, 1969a:362) where no immediate water supply presently exists. This might suggest that the site was used in times when environmental circumstances were quite different from those at present.

Folsom fluted points were reported from the surface of two sites, but they, too, were found mixed with materials clearly of later origin. Consequently, it was not possible to determine which materials at these sites were associated with the Folsom points, or Lindenmeier Complex materials, or with later horizons. Both sites, LA 986 and LA 57, were oriented toward open steppeland (Campbell, 1969a:362). It was not surprising that Folsom or Lindenmeier materials appear in this district, inasmuch as the classic Folsom site lay only a short distance beyond its confines (Wormington, 1957:23). There were frequent reports of large quantities of Lindenmeier material in blowouts in the loess-covered area along the eastern periphery of the Chaquaqua Plateau. In the area of the Raton mesas in Colorado and New Mexico, some sites were known to

contain Folsom points (Cassel, 1940:455). Few, if any, Llano or Lindenmeier materials appeared in the canyons, which probably were not frequented by the large, now extinct mammals.

Plano Complex materials were reported from eight sites, four of which were subsurface encampments, and three, surface encampments; the remaining site was a sheltered encampment. Materials consisted largely of parallel-flaked projectile points; however, chipped stone graters; drills; utilized asymmetrical flakes; and quartzite, cryptocrystalline, and quartz flake rejectage were reported, along with bone awls and bone wastage. Insufficient material is on hand to permit any reconstruction of the culture. However, it is interesting to note that seven of the eight sites were located in the canyons, which indicates that during this horizon prehistoric inhabitants of the district probably were exploiting, to a greater extent than previously, the lower canyon region with its dependable water supply and varied plant growth. The shift may have resulted from changing environmental circumstances that brought about the extinction of some large grazing animals of the steppes that, in turn, caused more and more hunting activity to be confined to canyon species such as deer (Campbell, 1969a:362).

There were seven sites with projectile points that are characteristic of Early Archaic horizons. Five of these sites also contained evidence of later occupation, and one contained evidence of earlier materials; in addition to Archaic remains, only one site contained a pure assortment of Archaic materials (Campbell, 1969a:362).

Points consisted of the Abasolo, Trinity, Pandale, and Travis types. Other chipped stone materials included bifacially flaked blades and ovates; small, rectangular side-scrapers; utilized blades and asymmetrical flakes; and quartzite and cryptocrystalline flake rejectage. Unprefomed mortars, one-hand, unifacial, loaf manos; polishers; and hammerstones appeared for the first time. A bone awl and some unidentified mammalian bone wastage were recovered. Most of the sites were surface encampments, but one site was in a rock shelter. As with Plano materials, the greatest concentration was in the canyons, particularly in upper canyon terrain. The use of rock shelters, higher frequency of sites in the canyons with their greater variety of vegetation, and the appearance of grinding tools all point to an increased reliance on gathering wild plant materials.

Late Archaic materials, postdating 500 BC, appeared at 10 sites (Campbell, 1969a:362), three of which have been test excavated, resulting in the recovery of a larger sample of material for this horizon than for earlier ones. Nevertheless, surface collections also recovered more material, perhaps because the later material was closer to the surface. The majority of materials still consisted of chipped stone artifacts and rejectage, but ground stone and pecked stone artifacts increased noticeably. Bone materials and some plant fragments were recovered, and shell artifacts and rejectage also appeared. Again, the diagnostic type of chipped stone material was the projectile point, all thought to be dart points and consisting of Yarbrough, Ellis, Edgewood, Palmillas, Shumla, and Marcos points. The dart points suggested the continued use of the atlatl or spear in the absence of the bow and arrow. Tools for producing goods for use in subsistence

activities included bifacial flake triangulates and blades, utilized ovate and asymmetrical flakes, and small, triangular-shaped side scrapers. The use of rawhide for clothing was implied by the presence of scrapers, but the only certain items of adornment recovered were cut and polished bone beads, cut shell beads, and polished shell beads. Some olivella shell wastage was recovered. For preparation of food, both one-hand loaf and biface manos were used. No metates were reported, but presumably they were in use.

The use of the atlatl, dart, or spear points indicates that hunting was an important aspect of the subsistence pattern; additional proof of this lies in the animal remains that were found. The most commonly identified species was cottontail rabbit; the next most common species, prairie dog. Other identified species were woodrats and jackrabbits. The remains of both small and large unidentified mammals were found in minor amounts; small mammal predominance suggests that larger game was not as important as it had been earlier.

Hunting small game and collecting wild plants point to the canyons as preferred locations for subsistence activities and habitations. This is corroborated by the fact that seven of 10 sites were located within the canyons. The sites in the plains, upper canyons, and cedar breaks were open surface encampments. Those in the lower and wider canyons were found in the rock shelters (Campbell, 1969a:362). It is probable that the lower areas were preferred in colder seasons, whereas the upper, more open terrain was preferred in warmer seasons. No structures were found at any site; but some crude stone barrier walls that isolate mesa points may have been used during this period as defensive measures in times of emergency. Shallow, basin hearths were found at open campsites; deeper, unlined fire pits occurred in at least one rock shelter. The deep fire pit may indicate longer occupation for shelters or more frequent reoccupation at this type of site. Possibly a particular shelter served as home base for small foraging groups who left the lower canyons during the warmer seasons for forays through the cedar breaks and into the steppes and returned when cold weather approached.

Most stone artifacts were of local quartzite or cryptocrystalline quartz, but Alibates flint rejectage also was found. Its presence provides evidence of contact between occupants of the plateau and those of the Texas Panhandle. One suspects that interaction between the two areas had been common for a long time prior to Late Archaic times. Also, the olivella shell wastage indicates some trade to the west, but the intensity of the trade is not known.

Because there is no hiatus between the arbitrary, natural, or cultural levels at sites containing both Late Archaic materials and succeeding Plains Woodland materials, it is assumed that there was no major population change in the district, such as new waves of migrants. Instead, inhabitants of the Plateau appear to have selected new traits independently and not as a complex, thereby modifying the old way of life until a Plains Woodland culture had emerged. At the outset the innovations made no new changes in the basic subsistence pattern or settlement pattern. The advent of horticulture may have been the sole revolutionary change during this long period of time; but exactly when it occurred remains undetermined.

There are six known sites or site levels in the district that contained some materials of a Plains Woodland nature but retained a high percentage of Archaic materials (Campbell, 1969a:375, 379). In some cases the materials included Woodland pottery associated with Archaic projectile point types. The sites are assumed to mark the initiation of Plains Woodland, or an early horizon of a late Prehistoric stage; the cultural materials of this stage may approximate those defined by A. M. Withers as the Parker focus (1954:3) Two sites were test excavated and, therefore, more material is available than is usual for most of the early horizons of the district.

Chipped stone artifacts and rejectage still provided the majority of material, but ground and pecked stone implements increased proportionately in number and variety; more plant, bone, and shell materials also appeared. The dominant type of projectile point was the Catan dart point, which occurred for the first time in this horizon; other dart types present were Kent, Ellis, and Yarbrough. Some Scallorn points were found, which suggest the introduction of the bow; but the atlatl or spear apparently continued to be the preferred weapon throughout most of the transitional horizon. Other tools included bifacial triangulate, ovate, blade, and asymmetrical flakes; a bifacial chopper; a unifacial chopper; unifacial asymmetrical flakes; graters; utilized triangulate, ovate, and asymmetrical flakes; and small rectangular, triangular, and oval-shaped side scrapers. The tapering flange drill appeared at this time. It may have been used earlier, but drills associated with earlier materials are too fragmented to be typed. At a few sites, rubbing stones and grooved stones were used, which enabled finer work to be accomplished with wood materials.

Unpreformed, unifacial metates, and one-hand, bifacial, loaf manos increased. A two-handed, unifacial, loaf mano was found, but this single item does not suggest a change in tools or methods of the simple food processing.

No basketry, matting, or cordage appeared at any site, but it was probably in existence by this time, if not much earlier. However, ceramic material occurred at two of the six sites. The few body sherds found were characteristic of the deep cord-marked Woodland ware.

Nothing is known of the clothing worn, but scrapers and single-pointed bone awls suggest the preparation of animal skins, perhaps for use as apparel. There were ornaments of cut bone and cut and polished bone beads. Other fragments of bone were cut and polished, and fragments of shell were either incised or polished. These worked bone and shell fragments may have served originally as ornaments. Shell wastage consisted solely of fragmented, freshwater mollusk shells.

Hunting continued as a prominent activity as is indicated by the number and variety of fragmentary animal bones. More fragments of large mammal remains rather than small mammals now appear, but more species of small mammals are identified. Bison, deer, and bobcat were hunted in this horizon perhaps for the first time. Prairie dog was the most common of the identified species; and cottontail rabbit was a close second. There were minor amounts of woodrat, jackrabbit, and mouse or rat bones. Due to the increased number of prairie dog and the appearance of bison, it would seem that more hunting was conducted in

the steppes at this time than in Late Archaic times. Yet foraging activity still was oriented more toward the canyons than in Early Prehistoric times. Gathering wild plants encouraged the use of timbered locations. It is at this time that wild gourds appeared in the archaeological record.

Five of the six sites were sheltered encampments that faced south or east; apparently they served as winter quarters and benefitted from a southern exposure. One campsite was in the steppes; another rock shelter was in an upper canyon; the remainder were in the lower canyons. No house structures were detected; but evidence of hearths was found at all sites. The fireplaces of the sheltered sites had deep, unlined pit hearths; the campsite contained a shallow basin hearth. Again, an impression is formed of family-sized units shifting seasonally from wide canyon to steppe and back, but, perhaps, lingering in the plains somewhat longer than in earlier times.

The majority of worked stone was of local quartzite or cryptocrystalline quartz, but a few flakes of Alibates and one flake of obsidian indicated contacts to the southeast and southwest of the district. Cultural influence from areas to the north of the district was noticeable. During the horizon, pottery making and, later, arrow points appeared. The traits characterize Plains Woodland complexes present in the Colorado Piedmont of northeast Colorado a little before arriving on the Chaquagua Plateau (Breternitz and Wood, 1965).

Nothing can be said in regard to the sociopolitical, religious, or aesthetic aspects of the early cultural horizons other than that they probably remained relatively simple. The physical type probably differed little from the contemporary populations in other parts of eastern Colorado; so it is presumed that long-headed individuals, such as those known from the Colorado Piedmont (Wade, 1966), also roamed the Chaquagua Plateau.

LATE PREHISTORIC HORIZONS ON THE CHAQUAQUA PLATEAU

By AD 450, the inhabitants seemed to have developed a local variant of the widespread Plains Woodland tradition. In general, it was characterized by Woodland cord-marked, conoidal-based jars; small, triangular, corner-notched arrow points; and circular houses with shallow basin floors and crude, dry-laid, horizontally placed, slab rock foundation. The culture appeared to be a local manifestation of the Graneros focus, a prehistoric complex defined by A. M. Withers (1954:3).

As always, chipped stone material was the best represented industry; but, again, the variety and amount of other materials (ground stone, bone, plant, shell, ceramic) increased noticeably. Twenty sites with this material appeared to fall definitely into the initial Woodland horizon (Campbell, 1969a:375, 379).

Projectile points consisted of both arrow and dart types; their representation was about even. The bow had become more popular, but apparently the atlatl or spear still was used commonly. Arrow points were usually corner-notched types, such as the Scallorn and Alba, but a few unnotched specimens such as Young and Fresno points, and even a few side-notched (one Washita and one single side-notched point) appeared in this horizon, probably in the latter part of it. Dart

points were largely the Catan type; but a few Marcos, Ellis, Palmillas, Marshall, and Edgewood points continue to be made and used.

A number of other tools appeared. Bifacially flaked knives—triangulate, ovate, blade, and asymmetrical, and semiovate flakes and semiovate cores—were common. As in earlier horizons, the triangulate was the most common form. Triangulate, ovate, semiovate, blade, and asymmetrical flakes worked on one face were found also, but less often than bifacial forms. Bifacial choppers continued to be used, and scrapers were more common than before. Most scrapers were small side-scrapers, rectangular in outline, but some were triangular or asymmetrical. A few small end, or snub-nosed, scrapers appeared for the first time. A flake scraper and core scraper also appeared. Utilized triangulate, semiovate, blade, and asymmetrical flakes were used. Drill fragments were found, but the type is unknown. More than likely, the fragments are bits from the tapering flange type. Among the ground stone tools were both rubbing stones and one grooved, flat stone. Such artifacts may indicate an increased effort to manufacture more sophisticated wooden and bone artifacts. Smoothed shaft sticks and cut pieces of cane were found; fragmented and charred wood was common.

The primary household and food processing tools were still the unpreformed, uniface slab metates and one-hand, loaf manos. Most manos have two worn faces, but some have only one working surface. Unpreformed, thin, ground sandstone slabs appeared; they may have been used for grinding soft-shelled seeds. Cordage consisting of two-ply, S-twist strands of yucca, and yucca strand knots and bundles probably served some household and field needs. Cord-marked sherds appeared at three sites; although scarce, sherds still were more common than during the preceding horizon.

Scrapers and single-pointed bone awls were, no doubt, used for dressing skins, but no article of clothing was found. Again, cut and polished bone beads appeared, but no shell ornaments were present, although fragments of polished shell were found. Shell wastage consisted mainly of freshwater mollusk shells.

Hunting undoubtedly remained a primary part of the subsistence pattern. Large mammal bones, such as bison and deer, predominated over those of small mammals, but the latter occurred at more sites. Bison and deer remains were found. Prairie dog and cottontail rabbit were the most frequently encountered species; other rodent bones occurred in minor quantities. Some bird bones appeared at one site, and a few feathers were found at another site. Utilized wild plants included gourds, plums, piñon nuts, and various unidentified seeds. As in previous horizons, fish remains were absent, but crayfish appeared in one site. If this aquatic species was a dietary item, it probably constituted only a small portion of it.

There is some subjective evidence that suggests that horticulture may have been introduced into the Chaquaqua Plateau during this horizon. Chapalote-Reventador, a variety predating AD 750, appeared at some sites in the district. Although it occurred in association with varieties postdating AD 750 that have been dated in the twelfth century, its presence indicated that this less durable

variety could be raised in the locality. There was no direct evidence of maize from this horizon, but an unfired piece of clay from LA 211 bears the impression of what appears to be an ear of corn; however, these impressions could be of some woven material or basketry. A third factor suggesting the presence of horticulture was the topographic location of the stone enclosures. Many were located on stream terraces in the canyons where neither game nor wild plant resources were optimal, nor was a source of potable water proximal; possibly arable land was close. Specimens of maize from this level found at LA 22 consisted of late varieties, such as *Harinosa de Ocho*, and were considered intrusive. Despite a lack of concrete or direct evidence, it is not unreasonable to assume that some incipient gardening was practiced within the canyons during the period from AD 450 to 750.

Of the 20 sites that are assignable to this horizon, six are sheltered encampments. Although some shelters had stone barrier walls, these features probably were associated with later horizons that were represented at the sites. The shelters had no consistent orientation, which may indicate that they no longer were preferred primarily as winter residences. Unlined fire pits were found in all shelters. Most shelters were within 1000 yards of a permanent source of potable water. Two campsites appeared in the mesa region, one on a mesa point and the other in a flood plain; both had remains of hearths. Most likely they served as temporary encampments for hunting expeditions.

During this horizon, many of the simpler stone enclosures were constructed and occupied. There are eight sites of this type containing evidence suggesting that they belong to the period. Two of these sites have been excavated and described. Most sites consisted of one single circular unit between eight and 15 feet in diameter with low, horizontally placed, dry-laid slab foundations, and basin, or saucer-shaped, floors. Three sites consisted of three rooms each, and two of these sites contained an oval-shaped room that was partitioned. An excavated, partitioned room, LA 145, had a shallow basin floor for each section. Rooms at both excavated sites contained doorways, but only one unit had a definite hearth; it was one of the few hearths in the area known to have been lined with stones. All building stone consisted of immediately available types of natural rock. It was piled in uncoursed tiers to a height of one to three feet above the surface. There was a preference for slablike rocks, and occasionally broken slab metates were included in the foundations. One site had a room built against a falloff rock that served as a part of the wall. All these sites were found in canyon regions or near the river plains on mesa points, tower tops, or benches. Seldom were locations defensible, nor was arable land always near, since two of the sites were found in the cedar breaks. The enclosures differed from other Plains Woodland structures only in the absence of postmolds and the presence of crude masonry foundations.

Apparently, occupants of the region were shifting toward surface structures as primary residences, and, more than likely, the stone enclosure served as the primary residence in the winter months. Evidence of burning activity in the form of shallow basin hearths, charred soil, or fired rocks occurred at all such sites.

The rock shelters probably were occupied less frequently than in previous periods, and now served more as temporary foraging stations.

Indications of contact beyond the district were found again in the cryptocrystalline quartz removed. Alibates and Medicine Creek flint occurred in minor quantities, and seven obsidian flakes were found at two sites. Trade must have taken place with Central and Southern plains peoples and, perhaps, Southwestern peoples. It is interesting to speculate upon the presence of stone foundations and possible Southwestern Basketmaker influence. Southwestern structures closely resembling those in the district appeared in the Los Pinos phase, AD 1 to 400, in the upper San Juan River Valley of southern Colorado, an area near to the center of Panhandle development. The Los Pinos house had a ring or apron of stones encircling a saucer-shaped floor. These habitations were located on topographic features similar to those occupied by Graneros houses; Los Pinos sites contained definite evidence of horticultural activities (Dittert *et al.*, 1963:2-5). In the following Basketmaker III, or Sambrito phase, of the upper San Juan, pithouses with antechambers were used. They may have provided the concept of partitioned structures for the Graneros focus. However, the general features of Basketmaker III pithouses often were found in the neighboring Southwestern area: the upper San Juan (Dittert *et al.*, 1963:5-9), and the middle Rio Grande (Reinhart, 1967:26; Vivian and Clendenen, 1965:18-23). Excavated floors, relative large size, roof or passage entryway, ventilator, subfloor storage cists, postmolds, sipapu, and other traits usually were lacking in these simple local stone enclosures. Perhaps the construction of stone enclosures was a response to the local environment by Woodland peoples inasmuch as rooms were little more than typical Plains structures that incorporate available stone into their foundations.

There are 27 other sites in the district that fall within this horizon, AD 450 to 750, or the succeeding horizon, AD 750 to 1000. Very likely, most of the sites were occupied late in the horizon between AD 600 and 800. Nine of these sites are sheltered encampments scattered throughout the river plains, canyons, and mesas. As with the earlier sheltered sites, masonry is absent but fire pits are common; at two of these sites, fixed mortars are found on the surfaces of falloff rocks. Both sites are in localities with a variety of usable wild plants. Eight campsites are found in the same area, but two occur in the steppes. Most are located in the wide canyons and river plains, indicating an increased orientation on these areas in later times (Campbell, 1969a:379).

Two late sites consisted of stone enclosures located within rock shelters. Each site contained only one unit; masonry and other features were similar to those previously described. Seven other stone enclosure sites existed. One site with only circular and oval separate rooms had a total of eleven rooms. At two sites, some rooms were found abutting falloff rocks or outcrops; both sites contained three units each. At another site consisting of four rooms, two rooms were contiguous and two were built against an outcrop; at a site with two rooms, one was partitioned. Some rooms were as much as 15 feet in diameter. Six of the nine enclosures were in wide canyon terrain, and one was in the river plains. As

in the earlier part of this horizon, over half the enclosures were situated in locations high above the flood plains; however, in this later period, more tended to occur in wide canyons with potentially arable land nearby.

With time, the enclosures seemed to increase slightly in number and size and have more variation in arrangement. Also, a continued shift toward the lower parts of the canyon was noticeable. No vertical slabs or fortifications were found at these sites; but stone walls that isolated small, steep mesa points may have been in use during this horizon; however, these sites may have been constructed in Archaic times. Nevertheless, the seminomadic foragers may have needed a temporary refuge but not necessarily fortified villages.

The tools and utensils were basically the same as in the earlier part of the horizon. A mortar, a two-hand mano, and a one-hand, wedge-shaped mano were used; but most grinding tools were similar to the previous types. Hammerstones and polishers reappeared and increased the inventory of ground and pecked finishing tools. A few bifacial leaf-shaped knives occurred with the other bifacial types, and a greater variety of arrow points, including Chaquaqua, Bonham, and Reed, were in use; but the dominant type remained the Scallorn; dart points decreased proportionately. The tapering flange was the most common type of drill. At 14 sites, a total of 40 deep cord-marked sherds were recovered. Ceramics may have been used increasingly, but they never seemed to become very popular.

Few major innovations occurred in the next horizon, but the cultural pattern became more varied. There were at least 20 sites containing material presumed to fall within AD 750 to 1000 (Campbell, 1969a:385-387).

The various industries maintained their relative significance proportionately. Arrow points constituted 88 per cent of all projectile points; the use of either the atlatl or spear declined to a relatively insignificant position. Scallorn points were the predominant type found, but unnotched arrow types, such as Chaquaqua and Fresno, were more abundant than in previous periods. The Huffaker arrowpoint appeared at this time. The usual bifacial and unifacial knives were present, but a few more were made from cores than had been the case in earlier times. There was still a wide variety of utilized flakes.

Nothing is known of textiles or clothing, but skin-dressing tools such as small rectangular or asymmetrical side-scrapers and small, snub-nosed scrapers were used. The percentage of snub-nosed scrapers increased. Single-pointed bone awls were still in use. Ornaments continued to be of cut and polished tubular bones and polished shell. Fragments of cut or grooved bone and polished or incised shell were found; a fragment of cut animal tooth also appeared in this horizon.

Manos and metates of the usual types were more common, and a few metates with worn surfaces on both sides were found. The bifacial mano predominates over the unifacial form. Hammerstones, polishers, rubbing stones, grooved stones, ground stone slabs, and ground cores were in use. Deep cord-marked sherds appeared at a few sites.

Hunting large and small mammals was still important, but no large mammals, such as bison, could be identified. Cottontail rabbits and prairie dogs remained the favorite game animals. Crayfishing apparently continued, and wild gourds, wild plums, and piñon nuts were collected. A little *Harinosa de Ocho* and Pima Papago maize occurred at one level in a site of this horizon. The possibility of horticulture occurring at this time is much greater than before inasmuch as local types of maize had already appeared in parts of the Southwest (Galinat and Gunnerson, 1963:119).

Stone enclosures were found at this period only in upper canyons, wide canyons, or river plains. Simple single and contiguous rooms are the rule, and there are few noticeable architectural changes in them. Some floors appear to have been excavated and have vertical or sloping subsurface walls with relatively level floors; the pit floors are not deep. Usually, there is more than one structure at a site. Features remain largely unchanged, but at LA 138 fixed mortars were found in the tops of falloff rocks. The enclosure sites now appeared to accommodate groups approximating small extended families.

A major change in settlements involved the appearance of barrier walls at habitation sites. An incomplete defensive wall was found at both LA 138 and LA 847. At LA 131 and BN 10 defensive positions were enclosed by low walls, but stone enclosures were located outside these areas. Only at LA 768 was there an enclosure, structure D, that has its approach completely barred. During this horizon inhabitants of the district must have found it prudent to remain close to defensible locations. The architectural style of the walls was similar to that found in the house foundations, except larger rocks were used. There were a few questionable instances in which rock slabs may have been placed vertically.

A number of rock shelters now had barrier walls, but more often than not, the low walls enclosed only a part of the shelter. In one shelter, LA 211, innumerable fixed mortars were used. It is quite likely that the rock shelters were serving mainly as spring and autumn foraging stations. Only a few campsites were known to have been used at this time; they were located in cedar breaks and upper canyons.

Perhaps some pictorial rock art was produced during this horizon. Pecked petroglyphs with small geometric and curvilinear designs, and small, fully pecked, horned or antlered quadrupeds often were found near stone enclosures of this horizon.

Another 13 sites may have been occupied in the latter part of the horizon between AD 900 and 1050. The sites included campsites and rock shelters (Campbell, 1969a:387) as well as stone enclosures. The enclosures are single, contiguous, or abutting structures. Frequently they are oval or oblong in outline. During this final stage of the Plains Woodland horizon, enclosures with vertically placed slabs used as foundations may have been introduced. There were two slab enclosure sites with partitioned rooms, and two other sites with barrier walls that obstruct access to the sites. Of the eight sites, nearly all were in the wide canyons and river plains, but one site was located in the mesa region on a

low terrace above a watercourse. Perhaps increasing horticultural activity necessitated a search for additional arable land and led to the exploitation of the higher mesas.

There was little change in the technology in this terminal part of the horizon. For a short time, unnotched Fresno points predominated, and Hayes arrowpoints first appeared. Gravers reappeared, and the large side scraper was used for the first time. The major change noted was the appearance of shallow cord-marked sherds, which may indicate that Woodland ware was being replaced by types that resembled the later Borger cord-marked ware.

Around AD 1000, full-blown Apishapa focus culture developed on and around the Chaquagua Plateau. With it came a noticeable increase in sites and materials. There were 68 sites believed to contain some material representative of this horizon; six of these sites were test excavated (Campbell, 1969a:395, 397).

Most materials that characterize the horizon are found consistently through the entire horizon, and only a few changes, either additions or deletions, are noted during the next three or four centuries. The chipped stone industry remained the best represented industry, but ground stone, bone, shell, and plant industries proportionately are represented better than in the Plains Woodland horizons.

Hunting with the bow and arrow apparently was still important. Dart points were still present, suggesting that the atlatl or spear continued in use; but the percentage of dart points compared to arrowpoints declined, and the only dart point now found was the Catan type. However, atlatl weights also have been reported. Side-notched arrow points, such as the Washita and Reed types, were now the prevailing forms. This may indicate a change in bow type, such as the acceptance of the sinew-backed bow. Fragments of cane arrowshafts entwined by rawhide were found, and pieces of cut cane often appeared at sites.

The bifacial and unifacial cutting tools or knives used in subsistence and household activities were retained from Plains Woodland times. No diamond-shaped, alternately bevelled knives appeared at any of the 68 sites. Snub-nosed scrapers occurred more often, but the small side-scrapers, flake scrapers, core scrapers, scraper knives, and gravers were in use along with bifacial and unifacial choppers and bifacial handaxes. Drills were still predominately of the tapering flange or small shaft types, but large, straight shaft and square flange types appeared. Utilized flakes of all forms occurred in abundance. Most of these items probably were used primarily for the preparation of bone and wood artifacts; the increased amount and variety of chipped stone artifacts reflected a refinement in bone and wood artifact production. A number of frayed, smoothed, or pointed shaft sticks, which may have been arrowshafts, were found associated with the chipped stone material.

Household items such as single-end and double-end bits, hearths of fire drills, and twined basketry and matting now appeared. However, it is suspected that these artifacts were in use for quite some time before AD 1000. Coiled basketry probably also was known; it appeared in neighboring districts (Morris

and Burgh, 1941:52). Two-ply, Z-twist yucca strand and rabbit fur cordage; two-ply, S-twist yucca fiber cordage; yucca strand bundles and square knots; twined rabbit fur cordage; and leather items were produced.

Ceramic material still was not well represented, but it was somewhat more abundant than before. Sherds had shallow, narrow cord-marks characteristic of Borger cord-marked, but a few deep markings were found on some.

There was no change in the style of manos and metates, and the usual ground and pecked tools were still prominent in the horizon. Some tools that are referred to as axes and picks were reported from sites of this horizon.

Information on clothing is still scanty, but the use of rabbit fur might mean that fur capes were used. Yucca fiber sandals are known from nearby areas (*Rocky Mountain News*, 1955); these may have been the common footwear in the district for a long period of time. Scrapers and bone awls were used for leather working, and they suggest the manufacture of clothing and footgear from hides. Shell and bone beads were very abundant, and polished stone pendants became a part of the inhabitants' ornamentation. A few olivella shells from the West Coast were traded into the district at this time, probably by way of the Southwest.

Horticulture became a fundamental part of the subsistence pattern during Apishapa times. There is reason to believe that gardening became more meaningful than foraging as a means of food acquisition. At least five varieties of maize were raised locally. All large sites and sites with structures were found in the proximity of arable land. The digging stick was used at this time; but the bison-scapula hoe was not in evidence. Farming in the canyon silt deposits that were devoid of the usual tough plains grasses did not require the use of the hoe; the digging stick probably was adequate for the needs of the farmers at this time. Gathering wild plants was apparently still important. Chokecherry, wild plum, cactus, and seeds were eaten and yucca quids were chewed. Hunting large and small game of all previous species, including bison, continued.

A few additional traits—the arrowshaft smoother, the small concave-edged scraper, and the double-pointed bone awl—were found at some sites in the latter part of the horizon. Beans augmented the domesticated plant products and added proof of the greater reliance placed on horticulture. After AD 1150 or 1175, some cord-marked ware was slipped, smoothed, polished or a combination of these.

The vast majority of houses were slab enclosures. There was little change in the arrangement of rooms, except that those abutting natural outcrops were rare; the rule was to construct the entire wall base of slabs. Most rooms were still single units. Floor plans were more varied than before, but the majority were still circular. Oval and semicircular, or D-shaped, rooms occurred with some frequency in the river plain; at one fortified site a rectangular room was found. This may herald the start of a new house plan, but few rectangular rooms appeared in the district at any time. Entryways were not found on the surface; they must have been either above the foundation or perhaps in the center of the top of a cribbed superstructure. Such openings sometimes were needed as smokeholes; however, most of the fire pits were found outside the dwellings. Floors appeared to be on the original surface of the ground and were relatively level. Since most sites were

located in terrain with a shallow soil mantle above bedrock, excavation of the floors would be impossible. On the average, rooms were somewhat larger.

There were more defensive sites now than before, and all but a few were near farmland. The fortified villages were less accessible than ever; most were located atop steep towers, buttes, vents, large falloff rocks, or very narrow, isolated mesa points. One or more walls of vertical slabs barred approach to a site. The total number of rooms in fortified sites increased; as many as 37 were found at one site. The arrangement of rooms within the fortified areas varied greatly. Rows of contiguous rooms as at LA 289, semicircular rooms built into walls found at OT 41, LA 152, or LA 977, random clusters of rooms present at LA 875, and many other arrangements now were constructed.

Rock shelters continued to be occupied, but seven of the 19 sheltered sites of this period, or more than one-third of them, had barrier walls; one, LA 815, had a wall of vertical slabs. Temporary structures of wattle and daub may have been constructed in some shelters; unfired clay fragments with stick and grass impressions were found at one site.

All stone and slab enclosures were located near canyons; most were in wide canyons or near the river plains, but more appeared in the upper canyons and mesas than during late Plains Woodland times. Apparently, improved horticultural possibilities permitted exploitation of the higher and cooler areas to the south of the canyons. The enclosure sites probably were occupied throughout most of late spring and early autumn, the planting and harvesting times, and again during the height of the winter season. It is possible that the larger villages may have been occupied year-round by some inhabitants, but it is unlikely that villages were occupied continuously for more than a few generations.

Sheltered encampments were scattered throughout the canyons and, unlike the stone enclosures, were found much closer to sources of potable water and abundant usable wild plants. They probably still served as foraging stations before planting and after harvesting activities had taken place. A few shelters, such as LA 22 and LA 550, served as temporary residences during farming seasons. Campsites were found in all regions and subregions. The larger ones in flood plains probably were used during times of farming, whereas smaller scattered sites were used as hunting stations throughout the year. Because of the lack of shelters in the steppes, the region was avoided during wintry days.

Increase in both density and size of sites reflects a remarkable population explosion in this horizon; it probably reaches an optimum that was neither surpassed nor equalled before or since, except for a brief period in the 1920's. Villages were large enough to contain units of lineage or band size, and, because of the clustering of enclosure sites at particular locales, there is a hint of intervillage cooperation that may have given rise to tribal units. The rise in population and increased complexity of sociopolitical organization probably was due to increased food production over food gathering and consequent availability of greater food stores. The use of improved varieties of maize made this possible. The usual evidence of subsurface storage or cache pits that normally were evident at Plains horticultural sites were largely absent in the

district. Most villages were located on topographic features that had a thin mantle of soil overlying bedrock; construction of subsurface pits with aboriginal tools was out of the question. But many contiguous rooms, semicircular rooms attached to defensive walls, small isolated rooms, or units within partitioned rooms may have served for storage or as granaries. Storage may have been the principle factor in the origination of multiunit structures.

Despite the relative degree of affluency, the farming population was still subject to the whims of local climatic factors. The variation of precipitation and run-off from locality to locality may have forced villagers to transfer their farming headquarters from one formerly favorable locality to another. If the latter place was in use or coincidentally selected by another, confrontation accompanied by armed conflict may have resulted between the competitors.

That warfare was absorbing some time and energy of the population is obvious from the presence of increased village size, selection of defensive positions for villages, and construction of barrier walls. Even temporary sheltered encampments commonly had defensive walls. Internecine conflict may have been intensified by border clashes with newly arrived Pueblo peoples in the Park Plateau region to the west or with new invaders from the north, ancestors of the historic Plains Apaches.

Contact with areas beyond the district is noticeable because of an increase of acculturation or trade items or both. More Alibates and Medicine Creek flint is found locally, which indicates that interaction with the Central Plains and Southern Plains was considerable. Obsidian, presumably from the Southwest, is still rare; but nine sites contained either corrugated or plain coiled ware that probably originated in the Pueblo villages of the Trinidad area; a few sites had olivella shell. Certain Southwestern influences upon the ceramic industry, such as surface treatment by slipping and the globular form of vessels, manifest themselves. Most varieties of maize are another introduction from the Southwest; the digging stick may have come by the same route. The presence of Fremont Dent corn may indicate contact with the northwestern part of the Southwest, but very little of this variety occurs locally. Perhaps the Southwest had some influence on the architectural style, inasmuch as slab foundations appear about AD 900 in the middle Rio Grande Pueblos (Wendorf and Reed, 1955:141). However, other traits such as fortifications, multiunit (contiguous or partitioned) structures, and masonry foundations, features superficially resembling Southwestern traits, all seem to have evolved from various simpler architectural styles of earlier local horizons and perhaps before close contact was established with the Pueblo villages of the Trinidad area or middle Rio Grande. The lack of trimmed and coursed masonry and mortar, the unplanned and random arrangement of rooms, the great use of circular rooms, and the absence of plazas and ceremonial areas indicate that Pueblo influence on local architectural style was, at best, weak. The appearance of a rectangular room may result from Pueblo influence; but, on the other hand, it may indicate Central or Southern Plains influence, although there is no evidence of the use of the central fire pit or four central posts in rooms that characterized Upper Republican, or Custer-Washita structures.

An additional item thought to have been derived from the Plains was the arrow shaft smoother, or polisher (Wedel, 1959:551); it appeared in the Southwest after AD 1000, about the same time (Wormington, 1951:104, 139) that it did in the district.

Burials in this horizon were simple, flexed, pit burials found individually as at LA 1047 or, less frequently, in pairs, as at LA 81. There seems to be no particular pattern in the orientation of the body, and accompaniments rarely consisted of more than a string of bone beads. In general, the method of disposing of the dead is a continuation of the widespread Plains Woodland pattern. Bodies were interred in open areas, as at LA 1047, or in rock shelters, as at LA 81 or LA 5, where they may have been placed beneath the floors. It is possible that some were placed beneath stone enclosure floors; a site resembling a stone enclosure and containing a subfloor burial was located in a nearby district (Huscher and Huscher, 1943:64-65). This procedure became common in the Antelope Creek focus of the Texas Panhandle (Krieger, 1946:46). The burial from LA 919 consisted of a dolichocephalic individual; the head form was the same as that for most other prehistoric Plains people. A burial from a stone enclosure west of the district had the same physical feature (Huscher and Huscher, 1943:64-65). The worn teeth of the individual from LA 919 suggest that food mixed with grit probably constituted a dietary item for some of the people at this time. A mixture such as this could be acquired through the use of sandstone metates that left sand grains in the ground corn flour.

Aesthetic items were limited to pictorial art closely resembling that from previous periods. Incised petroglyphs occurred frequently in localities having a high concentration of Apishapa materials. Painted sticks were known from the district, but their age is undetermined and their use unknown. Clay figurines and stone figures also appeared locally, but they have not been definitely associated with this particular cultural horizon.

There is no evidence at present that suggests that Apishapa fortified villages occurred in the area after AD 1400; instead, the area seems to have undergone a marked decline in sites, materials, and population in the fourteenth century. Perhaps the continued warfare contributed to the near abandonment of the district, but climatic factors also helped. It is known that severe droughts occurred in both the Southwest (Wormington, 1951:80-81) and the Colorado Piedmont in the latter part of the thirteenth century. One would expect that the intervening area, the Raton section, also was affected. A prolonged drought would hinder successful farming, cut the food supply, and force farmers to move elsewhere in search of more favorable terrain. The area south of the Las Vegas Plateau with a similar environment may have suffered from drought at this time; judging from the contemporaneous withdrawal of the Pueblos from the Trinidad area, drought also may have taken its toll there. The Colorado Piedmont never seems to have been a worthy prehistoric horticultural region (Breternitz and Wood, 1965:4). Consequently, there was only one direction remaining for the would-be farmers to move, and that was east toward or across the 20-inch rainfall line. If Apishapa peoples sought a canyon terrain to which they had adjusted,

they were left with only one nearby choice, the canyons lying astride the 20-inch line in the Texas and Oklahoma panhandles.

Following the close of the thirteenth century, material evidence of occupation on the Chaquaqua Plateau becomes scarce. It is unlikely that the district was completely abandoned by Panhandle peoples. Although the core area for horticultural activities and permanent villages may have shifted east, the Plateau may have been used periodically for the next century or so by Panhandle peoples, who hunted and gathered food throughout the district. A few rectangular enclosures, an architectural style found in the Panhandle region at this time, might suggest that brief and casual occupation continued here. There are two rock shelters (LA 125 and LA 213) and one surface encampment (LA 816) that have materials deposited very likely in the fourteenth century (Campbell, 1969a:406).

Chipped stone, ground stone, bone, and shell materials were fairly abundant at two of the sites. The dominant point types were Washita and other small triangular side-notched arrow points. Corner-notched arrow points, such as the Scallorn type, were still common; a few dart points were found. The atlatl or spear still may have been used occasionally. Bifacial triangulates and blades, and unifacial blades appeared along with bifacial choppers and unifacial hand-axes. Small side-scrapers, flake scrapers, and core scrapers were found, but there were no graters. The tapering flange and square flange drills were used, and utilized flakes of various forms appeared in abundance. Unpreformed, unifacial metates and bifacial manos, rubbing stones, perforated stones, and ground slabs occurred. Cut, polished, and incised bone fragments were found, as well as ornaments such as cut and polished bone beads, and shell pendants and beads. Shell wastage consisted of both olivella and freshwater mollusk shell fragments.

The bones of the usual small mammals and deer were recovered, but no bison remains were found. Apparently, hunting was still important, as was gathering wild plants, judging from the presence of wild gourds, wild plums, and piñon nuts. A little farming may yet have been practiced, inasmuch as beans were found; but there was no direct evidence of maize.

Little additional evidence occurs. Most sites, including the questionable rectangular enclosures, were found in upper canyons and wide canyons. All sites were small.

Curiously, the only cord-marked ware that appeared at these sites is a smudged ware that is not reminiscent of previous Panhandle cord-marked ware, but more closely resembles Upper Republican ware found in the Colorado Piedmont. Corrugated ware, olivella shells, and a few obsidian flakes indicate continued contact with the Southwest; the presence of Alibates flakes indicates interaction with the Panhandle area.

In the next century other types of sites appeared, but they contained little evidence of their cultural affiliation. The sites, referred to as earth rings, were described earlier; they may have been middens or habitations. Supporting the latter view is the existence of some rings that are surrounded by spaced stones and are similar to tipi rings, which are presumed to have been dwellings. There was one site located in upper canyon terrain and a few on mesa points, but most

were located within timbered areas of the cedar breaks. Eleven small, spaced stone rings with diameters that averaged only 12 feet were found in the same topographic situation as the earth rings; because they have a similar floor plan, size, and location, it is possible that they may have served as an alternate summer residence during this period of time (Campbell, 1969a:406).

The sparsity of materials and location of the sites suggest that small groups of foragers were occupying the district during the fifteenth century. Only chipped and ground stone materials were found; nearly all flakes were of local materials. Only a few Alibates flakes were recovered, and no obsidian flakes were found, which may indicate that there was little contact with areas either to be southeast or southwest. A few corner-notched arrow points, bifacial leaf-shaped knives and blade knives, unifacial blades, utilized blades, and asymmetrical flakes, graters, and large and small side-scrapers were used. Slab metates and one-hand, loaf manos were known also, but there was no shell, bone, or ceramic material.

Within another century, the Las Vegas Plateau, to the south of the district, is assumed to have been occupied by the Apache (D. A. Gunnerson, 1956:346). It has been proposed that they drifted southward at some earlier time by way of the High Plains (Harrington, 1940:521-523). In this case, it is very likely that they crossed the Chaquagua Plateau, because it lies on the direct route between the northern Plains and the Las Vegas Plateau. Presumably they would have been on or in control of the Chaquagua Plateau around AD 1435, when earth rings and, perhaps, small, spaced stone rings were in use. Reports of the Coronado expedition of AD 1541 record the use of conical, skin tents and dogs that pulled travois (Schroeder, 1962:7). These tents, or tipis, may account for the possible presence on the Plateau of tipi rings in the fifteenth century. Because such luggage as skin tents were transported by dogs, the load had to be light; this may account for the small size of the tipis used on the Plateau during the horizon.

Apparently sometime between the midfourteenth and early fifteenth centuries, the Chaquagua Plateau ceased to be Panhandle domain and became the property of prehistoric Apaches. The Panhandle people, who had used the region since Late Archaic times, probably had found areas farther east more useful once some reliance had been placed on horticulture. The district served primarily as foraging grounds in its final stage of occupation. Seasonal occupation and exploitation permitted other groups' temporary usage, and if the needs of the Panhandle people (who apparently relied solely on foraging) were great enough, they eventually claimed exclusive rights to the territory.

By AD 1550, Apache groups occupied much of the western portion of the Central and Southern Plains, including the Chaquagua Plateau. Increased contact between the new occupants of the Plateau and the Southwest is reflected by the increase of Plains trade materials in certain eastern peripheral Pueblos, in particular, Pecos (Kidder, 1932:43-44). Such trade was noted in 1541 by the Coronado expedition (D. A. Gunnerson, 1956:347). Some Apache bands eventually accepted and practiced the arts of farming and pottery making. The ceramic style frequently associated with Plains Apache is the thin, dark, micace-

ous tempered ware. Similar pottery was being produced at Taos by AD 1550 (Ellis and Brody, 1963:316). Around AD 1650 some Taos Indians fled eastward into the Plains, probably to western Kansas, and joined the Plains Apache (Schroeder, 1958:4). The opportunity for adoption of micaceous pottery as well as horticulture by Apaches of western Kansas and Nebraska and eastern Colorado would have been realized fully by this date, if such had not occurred earlier. A half century or so after this date, the Ulibarri expedition, while passing through the Chaquagua Plateau enroute to western Kansas (Shroeder, 1958:19-27), noted that the Penxaye Apache raised corn, beans, and pumpkins (Thomas, 1966:64). The appearance of horticultural peoples after AD 1500 may indicate that the earlier foraging bands, perhaps Lipan Apache, were being replaced by groups, such as the Jicarilla, that were more inclined toward farming (Schroeder, 1958:55-56).

There were 10 sites that contained thin, micaceous ware; eight were surface encampments within the district and the remaining two were rock shelters (Campbell, 1968:406). All were located in wide canyons, upper canyons, or mesas. None was found in either the timbered areas of the cedar breaks or open terrain of the steppes or river plains. There seemed to be a preference for the canyon fastness, but six of the sites were on level flood plains where arable land existed; the remaining sites were located near the flood plains. The surface encampments were probably small, seasonal horticultural villages. Some of the small, spaced stone rings and earth rings may have been used at this time as winter encampments.

The number and variety of artifacts were not so extensive as they were in the Apishapa focus, but there is an increase over the inventory of the previous two or three centuries. It remains a typical late Plains complex, but one that lacks some of the earlier traits and has but few new ones.

The elongate Fresno point was the most common type, but side-notched types, Washita, Reed, Huffaker, also were popular. A few corner-notched points, such as Scallorn or Bonham points, were used, but no dart points were found. Bifacial triangulates, semiovates, blades and asymmetricals and unifacial asymmetricals were found; but many forms were missing, and no bifacial or unifacial chipped stone implements made from cores appeared. No drills were found but they probably existed, inasmuch as they appear among early Plains Apache materials elsewhere (J. H. Gunnerson, 1960:248). Only a few asymmetrical flakes were found. A number of different scrapers appeared. The small side-scraper was the most common form, but snub-nosed scrapers were found almost as frequently as the side scraper and more often than in previous periods. Large end-scrapers, flake scrapers, and scraper knives were used. Of the ground and pecked stone tools, only unpreformed unifacial metates and ground stone slabs were found at the sites; but it may be inferred that manos, at least, also were used.

Nothing is known of the clothing; but cut and polished bone beads; cut, polished and incised tubular bone beads; and polished shell fragments were found at Dismal River sites. Shell wastage again consisted of olivella and freshwater mollusk shells. There are single-pointed bone awls associated with

this material. The awls and scrapers suggest that the people prepared hides perhaps for clothing and tipis.

Hunting was important; bones of both large and small animals were found; the number of small mammal species outnumbered the large species. Remains of all the usual small game animals except mice and rats were represented. There were no bird, fish, or crayfish remains; they may be too fragile to have been preserved in the open sites. Neither wild plant nor domesticated plant materials were found in the surface collections of these sites, but perishable materials in general were not present. The use of vegetable foods may be inferred from the presence of certain grinding tools, the location of sites, and ethnohistoric references.

No structures can be shown to belong positively to this horizon. Shallow basin, unlined hearths were found at a few sites, but no other noteworthy features were observable. Houses may have been on mesa tops above the flood plains. It was noted by Ulibarri (Thomas, 1966:64) that "on the banks . . . the heathen Apaches of the tribe called Penxayes have much planted corn, frijoles, and pumpkins. These with some fear came down to the foot of our mesa on this canyon (Chacuaco?). . . ." However, the upper levels of the mesa may have served only as refuges. Although the house type for the Penxayes is not stated, Apache bands to the east, the Cuarteles, and to the west, the Carlanas, apparently used tipis (Schroeder, 1958:131).

The archaeological evidence from the district is insufficient for establishing a definite relationship between the local sites and materials associated with thin, micaceous sherds. Sites in other districts have been identified as belonging to the Dismal River aspect, or protohistoric Apache horizon. Consequently, proof of the presence of Apaches on the Chaquaqua Plateau in early historic times relies upon a proper interpretation of ethnohistoric data, in particular those data provided in the records of the Ulibarri expedition to Colorado in 1706. However, complete agreement on the interpretation of these records has not been achieved by the principal students of, or authorities on, the route of this entrada; at least three major interpretations of the location of the route now have been proposed (H. W. Hough, 1948; Schroeder, 1960; Thomas, 1966). The route proposed by Schroeder appears to be the most convincing one inasmuch as he personally traveled the possible routes and checked both distances and possible landmarks, used additional supporting ethnohistorical data to strengthen his argument regarding the proposed route, and placed the expedition at a known archaeological site that most closely resembled the destination of the expedition. According to the proposed route of Schroeder, the Ulibarri expedition crossed the Chaquaqua Plateau where it contacted the Penxaye Apaches.

By 1727, the Apaches of eastern Colorado and western Kansas had withdrawn from their original homeland and had retreated southwestward into the Taos and Pecos areas of northern New Mexico (Schroeder, 1958:57-59; Hyde, 1959:93). There is no record that the Penxaye joined this retreat, but it seems likely that they did. At this time the Comanches, advancing southward, had reached the Arkansas River. The Comanches split into two groups: one, the

Penatakes, moved westward along the Arkansas River, and the other moved from a point north and east of the district southward toward the Lipan on the Red River in Texas (Schroeder, 1960:22-23). It has been assumed that the Utes later drove the Apache off the Plateau (Hyde, 1959:95), but there is no definite evidence to substantiate the presence of either Utes, Comanches, or Apaches in the district at this time. In fact, no particular historic group can be placed definitely within the district during the middle and latter parts of the eighteenth century. In this case, it is possible that the Penxaye retained the area long enough to become horse nomads themselves and later developed into the Ae (Apache?), who were somewhere in the area of the Arkansas River in 1749 (Schroeder, 1958:65).

Not until the midnineteenth century is any identifiable group mentioned as being in the district. In 1860, Arapahoe and Cheyenne campsites are reported on the Purgatory River 30 miles above the Arkansas River (Wedel, 1963:10); this would place them in the general area of Higbee Valley, or zone 2. Judging from the number of spaced stone sites located in the district, it undoubtedly was used many times before and after 1860.

The majority of spaced stone sites, which were presumed to be of historic age, consisted of rings (Campbell 1969a:415). These sites contained very little material, and that which did occur was largely of chipped or ground stone; nevertheless, a few bone and metal objects were found.

Arrow points were unstemmed, corner-notched, or side-notched varieties, all crudely made; one arrow point resembled a Livermore. Larger spear points were oddly shaped. Bifacial knives occurred in various forms—triangulate, ovate, blade, and asymmetrical. Choppers, handaxes, unifacial triangulates, and utilized blades and asymmetricals were used. Only one drill, a midexpanding shaft type, was recovered. Scrapers consisted of small-side, snub-nosed, or large-end types. Most material, again, was of local quartzite and cryptocrystalline quartz, but a little Alibates flint, Medicine Creek flint, and obsidian were found. The chipped stone artifacts resembled those in previous horizons, but were cruder.

Of the bone material, only one single-pointed bone awl was reported from a spaced stone ring, and its association may be questioned. A little bone wastage from unidentified mammal remains was found at one site.

Both unifacial and bifacial unperformed slab metates and one-hand loaf manos occurred at these sites. Hammerstones and polishers have been reported also.

The recovery of metal points at some spaced stone ring sites attests to the historic nature of these sites. The proximity of Bent's Fort of the Arkansas River to the district suggests that after 1831 and the establishment of the trading post, metal may have become readily available to local Indians through trade.

The various types of sites have been described and discussed earlier in the text, and all that needs to be repeated is that smaller clusters of rings in canyons were most likely winter encampments, whereas larger clusters nearer the steppes probably were occupied during the spring and summer months. It is doubtful that

any horse nomad group remained year-round in the district; nevertheless, they probably returned annually for brief stays.

The various spaced stone wheels, spokes, alignments, and piles were constructed in this horizon. Apparently, they functioned as a part of the ceremonial aspects of the culture. Because most are isolated sites, it is unlikely that they marked places of gathering, but, as has been suggested for similar sites in the Northern Plains (Brown, 1963:228), they were constructed and used during a vision quest.

Some pictorial rock art within the district is probably attributable to historic Indians. Pictographs display outline anthropomorphic figures, some with feathered staffs or lances and some mounted on horses. Pecked petroglyphs near tipi rings often have zoomorphic figures of bison, deer, and pronghorn. Pecked geometric designs consisting of rows of parallel, small vertical lines resemble some figures associated with winter counts.

One burial removed from a crevice was accompanied by a belt buckle and some stone artifacts. The individual was extended and covered with rocks. Some stone piles reputedly contained burials of historic Indians, but none was found. However, such burials also were reported in the Texas Panhandle (Studer, 1931:75), and one apparently similar to this was located in Pueblo County, Colorado (Bass and Kutsche, 1963:40-43). Both types of graves are reported for Comanche Indians (Wallace and Hoebel, 1964:150).

With the military defeat of the Plains Indians in the late 1860's, the development of the railroads in the Arkansas Valley in the 1870's, and the opening of the plains for homesteading in the 1880's (Hafen and Hafen, 1956:218, 294-297), occupation of the Chaquaqua Plateau by American Indians rapidly declined. After 1875 it is unlikely that any Indian group occupied the district seasonally, and by 1890 none ventured near it.

SUMMARY

The prehistory of the district commenced about 10,000 years ago with the appearance of the Llano materials. The small amount of evidence for this horizon as well as for the succeeding horizon, Lindenmeier, is found entirely in the steppe region where large, now extinct mammals probably grazed. With the onset of the Altithermal stage, about 8000 years ago, arid climatic conditions forced a change in the residence pattern and the hunting techniques; consequently, the Plano materials are found most frequently in the canyons where deer and small game lived.

In the following Archaic horizons, postdating 5000 BC, materials that include milling tools most often are located in rock shelters in the canyons; more than likely, the shelters served as winter quarters. By Late Archaic times, postdating 500 BC, nearly all sites were confined to canyons, and the small game hunting, wild plant collecting subsistence pattern was developed fully. Between AD 200 and 450, new traits, such as Catan dart points, Scallorn arrow points, the bow and arrow, the tapering flange drill, and Woodland pottery, were adopted by the local population. Hunting activities were balanced between the steppes

and the canyons, and modern bison was added to the list of game. The total amount of material increased, suggesting a population increase, but there was no change in ethnic composition.

In the early part of the Plains Woodland horizon, AD 450 to 750, circular to oval stone enclosures that consisted of individual, partitioned, or abutting rooms were scattered throughout the canyons, including the cedar breaks. They were probably new winter quarters. Perhaps some incipient farming was practiced, but foraging, which included catching crayfish and birds, remained the primary means of subsistence, if not the sole means. At this time snub-nosed scrapers appeared.

In time, the number of enclosures at a site increased, and the total enclosure sites increased, while they seemed to shift more and more toward the lower and wider canyon terrain. Between AD 750 and 1000, contiguous rooms appeared, and floors of rooms were excavated and leveled; some barrier walls accompanied stone enclosures, rock shelters, and isolated, open sites. Horticulture may have been introduced and become an adjunct to foraging. The bow and arrow was then the dominant weapon. At the close of the horizon, some trace of shallow, cord-marked ware and vertical masonry occurred, and perhaps small villages appeared on the mesas.

Between AD 1000 and 1350, enclosure sites increased sharply; the enclosures were varied, more numerous in a given site, and more defensible. The villages were clustered around areas suitable for farming. The population may have reached an optimum at that time. Improved horticultural techniques, including the use of the digging stick and raising *Harinosa de Ocho* maize and beans, were instituted. Bigger cord-marked pottery; large, straight and square flange drills; side-notched arrow points; and perhaps, the sinew-backed bow were adopted. By the fourteenth century, warfare, drought, overpopulation, or a combination of these factors led to a gradual abandonment of the area and shift toward the east.

In the fifteenth century simpler sites of earth rings, or midden circles, and tipi rings appeared; a foraging population had replaced Panhandle horticulturalists. By the seventeenth century, thin, micaceous ware and horticulture had been adopted from the Southwest; a local variant of the Dismal River culture, protohistoric Apache, appeared on the Plateau. Pressed by the mounted and well armed Comanches after AD 1700, Dismal River culture declined, and historic horse nomads used the area seasonally until the latter part of the nineteenth century.

INTERAREAL RELATIONSHIPS

The similarities between Late Panhandle materials on the Chaquagua Plateau and those to the east in the Texas and Oklahoma panhandles are close enough to consider classifying all the materials as manifestations of the same basic culture. However, the local distinctions have not been shown to be caused by or to result from either geographic or temporal differences; neither has the overall distribution of the culture and its variations been examined.

In an effort to determine the overall distribution of Panhandle culture, its regional variations, and the temporal changes, the physiographic regions or subregions adjacent to the southeast Chaquaqua Plateau district were examined and the findings are presented. An attempt was made to determine the degree of influence from the adjacent major culture areas (the Southwest, the Intermontane area, the Central Plains, and the Southern Plains) on the Panhandle culture, and, in turn, the influence of Panhandle culture on these adjacent regions.

NORTHWEST CHAQUAQUA PLATEAU AND SOUTHWEST COLORADO PIEDMONT

The two physiographic subregions of the area adjoining the southeastern Chaquaqua Plateau on the north and west are similar to the southeastern district of the Chaquaqua Plateau both topographically and prehistorically. In general, archaeological materials in these areas are better known and have been reported more often than southeastern materials. It is in the area immediately to the northwest of the southeastern Chaquaqua Plateau that two important sites with possible Panhandle affinities have been reported: the Apishapa site, or Snake Blakeslee I, which serves as the type site for the Apishapa focus; and the Graneros site, which serves as the type site for the Graneros focus, a Plains Woodland manifestation with traits that appear to be related to the later Apishapa focus.

The two subregions within the area include the northwest district of the Chaquaqua Plateau section and the southwest district of the Colorado Piedmont section. The northwest district lies west of Trinchera Creek, northwest of the Purgatory River, and south of the Arkansas River Valley; it is bounded on the south by the Raton mesas, and on the west by the Park Plateau and the foothills of the Rocky Mountain front range. The southwest district lies north of the Arkansas Valley, west of Fountain Creek, and east of Wilson Creek and the Royal Gorge. The higher elevations of the districts are along their southern and western margins among the mesas and foothills; in most respects the topography and flora and fauna are similar to the mesa terrain of the southeastern Chaquaqua Plateau. The majority of the area consists of open steppeland; proportionately, more of this type of terrain is found here than in the southeastern district. Nevertheless, canyon terrain prevails along the upper and middle courses of the major streams. Seldom is a sizeable canyon more than 10 miles from the next one; thus, a network of canyon terrain extends from Wilson Creek on the western margin of the southwestern district of the Colorado Piedmont to Carrizo Creek on the southeastern margin of the Chaquaqua Plateau, forming a northwest-southeast chain of canyons. The chain marks the region in which the heaviest concentration of Panhandle or Panhandlelike materials are located.

There has been very little archaeological evidence of pre-Plains Woodland materials reported for the northwestern or southwestern districts. Lindenmeier complex materials have been located in the area (Nelson, 1969:118, Nelson and Breternitz, 1970:33). The intermediate position of this area, which lies between the classic Lindenmeier site in northeastern Colorado and the Folsom site in northeastern New Mexico, suggests that the two intervening districts were used

during this early prehistoric horizon; consequently, a Paleoindian horizon has been postulated for the area (Cassell, 1940:455; Chase, 1952:21).

Reports of Archaic materials are few. However, material dating into Alti-thermal times appeared at Trincheras Cave, which indicates that occupation of the general area probably continued past 5000 BC (*Rocky Mountain News*, 1955:28). Perhaps stone defenses reported near the mid-Timpas Creek region of the northwest district were in use during Middle Prehistoric times (Tatum and Dondelinger, 1945:13). It is assumed that during this time the region and adjacent ones were in use by small nomadic, foraging groups (Haug, 1968).

References to Late Prehistoric materials in the area appear quite frequently when compared with reported instances of earlier materials. Encampments and sheltered sites containing Woodland pottery or other Woodland materials have been reported often (University of Denver; Withers, 1948:10, 1964:5). Other reported sites with unspecified cord-marked ware (Nelson, 1967:4), and certain dry rock shelters with reputed Basketmaker material (Robb, 1942:19; Chase, 1952:21; Withers, 1948:10) may also belong to this horizon.

The most significant sites are those with structures with stone foundations, or stone enclosures, such as the Graneros site, a site that also contained a pithouse and subsurface storage pit (Withers, 1954:2). It has been noted that some small stone enclosures, particularly those located on bluffs above the river, may have been constructed earlier than larger enclosures found nearer the floors of the valleys (Withers, 1948:10); these earlier sites may be Woodland habitations. Originally it was assumed that the early materials were an outgrowth of a Woodland focus, the Parker focus, found farther north in the Colorado Piedmont (Withers, 1954:2), but subsequently a radiocarbon date of $AD\ 450 \pm 55$ obtained from the Graneros was contemporaneous with or earlier than Parker, which has been dated at $AD\ 590 \pm 200$ (Scott, 1963:47-48). The view has been advanced that Graneros may have established a distinct tradition from that of Parker and may have led directly to the development of the Apishapa focus (Wood, 1965:11). Perhaps both Graneros and Parker materials developed from a widespread, generalized Woodland phase similar to the transitional materials found in the southeastern district of the Chaquaqua Plateau.

Graneros focus, or Plains Woodland, artifacts of the area were the same as those on the southeastern Chaquaqua Plateau, except that some cord-marked Woodland ware from the northwestern district had a micaceous content (Withers, 1964:5) and some rim sherds were incised (University of Denver, s:9:31); also, a cache with Woodland ceremonial objects has been reported (Tatum, 1944b:25). Subsistence activities would be comparable to those in the adjoining southeastern district. It is possible that some horticulture was practiced in this horizon, because maize was reported in association with Woodland pottery at one site (University of Denver, z:2:22). Habitations consisted of small enclosures, campsites, rock shelters, and, possibly, pithouses. One rock shelter contained an enclosure (Renaud and Chatin, 1943:19-20; University of Denver, z:2:6), and another was enclosed by a barrier wall (University of Denver, z:2:26). Nearly all of the sites were located in canyon terrain.

The northwest Chaquaqua Plateau, the southwest Colorado Piedmont districts, and the southeastern Chaquaqua Plateau apparently share the same Woodland tradition. Minor local differences in pottery, such as micaceous temper and incised rims, that are found in the northwest and southwest districts may be attributed to influence from the nearby Parker focus of the Denver Basin or Anasazi culture in the upper Rio Grande. The distinctive pithouse at Graneros is unique except for two located near Golden, Colorado, which are considered a type site for the Hog Back phase (Nelson, 1971:11). The latter phase may not be sufficiently distinct from Graneros to consider each as a separate cultural entity. Both Graneros and Hog Back architectural features may have resulted from Southwestern influence.

More than likely, other influences from cultures in the foothills and Plains area of the Denver Basin and Platte River drainage in the northern Colorado Piedmont occurred. Cord-marked pottery and small triangular corner-notched points have been dated at earlier times in northern sites than in southern ones (Breternitz and Wood, 1965:5-6); the traits probably diffused southward in the third and fourth centuries. However, maize and its domestication, which is in evidence in the foothills west of the Denver Basin in Complex B (AD 700 to 810) of the Lo-Daiska site (Irwin and Irwin, 1959:106-113, 1961:114-115), probably was traded into this area from the southwestern Colorado Piedmont by way of the Turkey Creek-upper South Platte River drainages.

Apishapa sites and materials are well represented; the horizon is marked by the appearance of slab enclosures and the increase in all types of enclosures. There were major concentrations of enclosures in the Canon City-Turkey Creek area, which had nine sites (University of Denver; Renaud, 1932:9-11, 1942a:4-8, 1942c:56; Withers, 1964:2-3), the Goodpasture area with four sites (University of Denver; Renaud, 1933:16, 1942a:10-11, 1942c:56), the lower Cucharas River and middle Huerfano River with 15 sites (Renaud, 1942a:2, 1942c:56, 1943; Renaud and Chatin, 1943:7-29), and the middle Apishapa River with 12 sites (Dondelinger and Tatum, 1942; Chase and Stigler, 1949; Chase, 1951; University of Denver; Renaud, 1931:95-98, 1932:15, 1935a:14, 1942a:14-17, 1942c:56; Renaud and Chatin, 1943:38-39; Withers, 1964:4). Most of the larger concentrations lay in the deep parts of the wide canyons, but some isolated sites, such as Wilson Creek (Moorehead, 1931:116-117) at an elevation of 8000 feet, and Chama Church (Renaud and Chatin, 1943:36) at 7900 feet were scattered through the higher canyons of the foothills. Collectively, there were nearly 250 structures or rooms in 50 reported sites; the number of rooms in a site ranged from one to 26; at least four sites had more than 10 rooms (Renaud, 1942a:14-17; Renaud and Chatin, 1943:12-17). The average size of rooms was comparable to those found elsewhere; at one site on Turkey Creek, a circular slab enclosure with a 50-foot diameter was recorded (University of Denver, s:5:9). Floor plans were most often circular, but proportionately there were more rectangular than circular ones in the southeastern district. Seven sites contained, collectively, 20 rectangular rooms (Renaud, 1942a:6-11; Huscher and Huscher, 1943:64-65; Renaud and Chatin, 1943:7-8,

21-22, 59); curiously, five of these seven sites were in the foothills. Most foundation walls were built either of vertical slabs or boulders or a combination of both; but one site, Snake Blakeslee I, on the Apishapa River had columnar stones, or stone bars, placed horizontally and vertically to form foundations or other features (Chase, 1951:6-7; Tatum, 1947:33-36); a similar feature appeared in room 1 of LA 977 in the southeastern district of the Plateau. The use of columns at Snake Blakeslee I probably resulted because native Dakota sandstone in the immediate vicinity of the site fractures naturally into columnar form, enabling occupants of the site to obtain easily this type of building stone. At most sites the slabs were placed vertically, but at a few sites some were placed horizontally (Chase, 1951:6-7); the latter type of masonry may denote a structure of the earlier Graneros focus. At three sites, one on the middle Apishapa River (Snake Blakeslee I), walls were constructed of two parallel rows of vertical slabs; the area between the parallel rows of slabs was filled with rubble (Renaud and Chatin, 1943:18, 21-22; Chase, 1951:7). The site on the Cucharas consisted of five contiguous rectangular rooms, which are similar to the multiunit structures of the Antelope Creek focus in the Texas panhandle (Krieger, 1946:42-43). Many sites had contiguous rooms or rooms built against barrier walls; at two sites on the Cucharas, rooms were built into natural formations. Another site on the lower Cucharas contained four circular enclosures constructed within a rock shelter (Renaud and Chatin, 1943:26-28).

There were at least 12 sites with barrier walls or fortifications; five were found on the Middle Apishapa, three on Turkey Creek, two on the middle Cucharas, one on the lower Huerfano, one near Canon City, and one in the Goodpasture area. As usual, these sites were generally larger and were located in more defensible topographic positions than the other enclosure sites (Renaud, 1932:11, 1935a:14, 1942a:4-8, 10-11, 14-21; Renaud and Chatin, 1943:18-21; Chase and Stigler, 1949; Withers, 1964:2). Fewer inaccessible locations near arable land were found here than in the southeastern district; consequently, fortified villages of the northwestern and southwestern districts incorporated more barrier walls. Some enclosures were completely surrounded or enclosed by defensive walls. Such was the case of R76A on the Apishapa River, a site that would be open on all four sides if it were not for the presence of a complete defensive wall (Renaud, 1931:96). Three sites with completely enclosing walls were oval in outline; one was located on the Apishapa River and two were on Turkey Creek (Renaud, 1931:96; Withers, 1964:2).

Other types of sites also were used during this horizon. Some sheltered sites, encampments, and pictorial sites bore materials that characterized the Apishapa focus; this was especially true of materials located at Chamber Cave near Pueblo (Nelson, 1970:1-11).

The diagnostic points of this horizon are typical of those found in the southeastern district. Generally, the pottery was cord-marked ware of the Borger type (Withers, 1952:3); eight enclosure sites, one on Turkey Creek (Withers, 1964:3), one at Goodpasture (Renaud, 1933:16), three on the lower Cucharas, two near Walsenburg (Renaud and Chatin, 1943:9-12, 20-23, 33-34), and Snake

Blakeslee I (Withers, 1964:3), contained cord-marked ware. There were three campsites on or near Turkey Creek with cord-marked sherds that had been smudged or smoothed (University of Denver, z:9:5, s:9:24, s:9:30; Renaud, 1931:94, 1932:9; Withers, 1964:3); it is referred to as Upper Republican pottery. At Snake Blakeslee I, cord-marked ware had incised rims of the Upper Republican type (Withers, 1964:4); this type of pottery may have been found in association with Borger cord-marked ware at this site (Withers, 1954:2). Most likely, both types were made locally, with a possible preference among Panhandle peoples for Upper Republican styles in those parts of their territory that were nearer to and under greater influence of Upper Republican peoples of northeast Colorado.

Pueblo trade ware appeared at four sites. Taos Black-on-White and Santa Fe Black-on-White were found at Snake Blakeslee I (Withers, 1954:4, 1964:4), which dates the occupation of the site in the thirteenth century. Chaco 2 sherds were found at one fortified stone enclosure site, and Wiyo Black-on-White was recovered at another stone enclosure on the lower Cucharas; the types date the sites between AD 1100 and 1200 for those with Chaco 2 and AD 1300 for those with Wiyo Black-on-White (Renaud and Chatin, 1943:20-21, 24-25). A rock shelter on the lower Cucharas yielded coiled pottery dating between AD 1000 and 1050 (1943:23). Other pueblo pottery has been reported for the area (Tatum, 1944b:25) but has not been described. In addition to trade ware, obsidian provided evidence of trade with the Southwest; it was found at one site on the lower Huerfano (Renaud and Chatin, 1943:7-8).

Subsistence activities within the area were much the same as in the southeastern district and involved horticulture. Maize was found in four sheltered sites: at Trinchera Cave (Chase and Stigler, 1949; *Rocky Mountain News*, 1955:28), on the Saint Charles River, and in Madden Canyon, where it was associated with digging sticks (University of Denver, s:13:21, z:3:1), and on the lower Cucharas, where it was associated with four stone enclosures (Renaud and Chatin, 1943:26-28).

In the Walsenburg area, a burial was found at C 968, an enclosure site containing smoothed or smudged cord-marked ware (Renaud and Chatin, 1943:34). This may be the burial referred to by Huscher and Huscher (1943:64-65), who state that it consisted of an adult, dolichocephalic male that had been placed in a flexed position within a stone enclosure. This type of burial appeared to be characteristic of most Panhandle burials.

The similarity of the settlement, architectural, artifactual, and burial traits, and the coeval occurrence of these in this area and the southeastern district indicate that all three districts shared in the same prehistoric cultural development.

No earth rings were found in the area; however, it was assumed that early Apache, or Dismal River, culture was in the area by AD 1500 (Withers, 1952:20-21). It has been proposed that the stone masonry structures (Chase, 1952:21) and the maize from rock shelters were the remains of these early Apache groups (Wedel, 1964:152); but the most diagnostic feature of the Plains

Apache or Dismal River culture—thin, micaceous-tempered ware—usually appeared in open encampments and rarely, if ever, in enclosure or sheltered sites.

There were seven campsites in the area that had some material suggesting the presence of Dismal River peoples. Four sites contained micaceous-tempered sherds (University of Denver, n.d.:z:6:4, z:8:12; J. H. Gunnerson, 1960:235); but these may have been Southwestern trade ware, perhaps Taos micaceous (Ellis and Brody, 1963:316) or various Pueblo II, III, or IV utility wares (Ellis, 1936:13, 17, 19; Bullen and Bullen, 1942:62). A fifth site had Red-on-Buff sherds, a trade ware from the Southwest that placed the site in a period postdating AD 1300. Other trade ware from the Southwest consisted of types produced in the Tewa and Taos Pueblos from AD 1500 to 1700; two sites with this pottery also contained glass beads (University of Denver; Renaud and Chatin, 1943:30, 58). Additional trade ware found at a seventh site consisted of Great Bend pottery from sites in Central Kansas predating AD 1750 (Nelson, 1966:85).

In 1706 the Ulibarri expedition noted that the Jicarilla, Flecho de Palo, and Carlana Apaches resided in the area of the Sierra Blancas (Spanish Peaks?) (Schroeder, 1958:19-28), and in 1719 these Apaches informed Valverde that they formerly occupied the area around the Cucharas River. However, by the latter date they had been driven into New Mexico by the Comanches (1958:30-44). Like the Penxayes, these Apaches practiced horticulture and are reported to have raised maize and beans (Thomas, 1966:64).

With the retreat of the Apache, the Comanche and Ute arrived in the area (Thomas, 1966:114); eventually, other horse nomads appeared. The presence of these horse nomads was marked by the existence of a number of spaced stone ring sites and two burial sites.

There were at least 13 recorded tipi ring sites scattered throughout the steppes of the two districts (University of Denver). None contained any significant, or diagnostic material, but it was assumed that the sites are coeval with the majority of spaced stone rings on the southeastern Chaquaqua Plateau. A "Ute" cemetery in the Canon City area has been reported but not described (Renaud, 1932:11). Another site contained the burial of a 40-year-old brachycephalic woman in a rock cairn; the burial is probably 100 to 200 years old (Bass and Kutche, 1963).

There are a number of references attesting to historic horse nomad occupation of the area; Comanches and Utes were there by 1719 (Thomas, 1966:114); Ae Apaches, by 1749; Kiowas, Arapahoes, Cheyennes, and Crows, by 1821; and Pawnees in 1825 (Schroeder, 1958:66, 77-78, 81, respectively). By the midnineteenth century, the area was contested by Utes, Arapahoes, and Cheyennes; and by the late nineteenth century (AD 1875), the area had been abandoned by all aboriginal groups.

MID-SOUTHERN ROCKY MOUNTAINS

To the west of the Chaquaqua Plateau and the Colorado Piedmont are two mountain parks, the upper Arkansas Valley and the San Luis Valley. Both areas

have some prehistoric materials that appear to be related to the material on the Chaquaqua Plateau.

The upper Arkansas Valley, the northernmost of the two, is a high area enclosed by mountains that isolate it from the upper Gunnison River Valley to the west, the upper Platte drainage to the north, and the High Plains to the east. It opens to the east into the Colorado Piedmont through the Royal Gorge and to the south into the San Luis Valley through Poncha Pass. The southern park, the San Luis Valley, is bounded on the west by the San Juan Mountains and on the north and east by the Sangre de Cristo Mountains. The distance between the two ranges narrows by the south end of the valley and forms a steep gorge through which the southward flowing Rio Grande passes. Both parks are relatively high (8000 feet), level plains studded by volcanic mesas. Owing to a mantle of porous sand, water in the local streams often flows beneath the stream beds; consequently, it is undependable for long-term, sedentary, horticultural activities. However, the area is useful for floodwater farming purposes (Fenneman, 1931:128-132). The existence of stone enclosure sites high in the foothills of the front range indicates that the water supply was sufficient and the elevation was not too high for Panhandle settlements.

Prehistoric materials from the area, in particular the San Luis Valley, present a confusing picture. Nonetheless, the significance of the area in regard to Plains-Southwest contact cannot be underrated. It is within this area that prehistoric Plains and Southwestern peoples remained in proximity to one another for a long period of time.

The presence of Lindenmeier and Plano materials within the San Luis Valley has been recognized for some time (H. Boyd, 1942:20; W. Boyd, 1949:41; Renaud, 1935a:6-10, 1942b:4; Wormington, 1957:29-30). Four campsites were reported in which Folsom points and associated materials were found (Renaud, 1935a:8-10; Wormington, 1957:29-30). It has been suggested (Wormington, 1957:30) that the Lindenmeier complex involving bison hunting may have survived for a longer period here than elsewhere because higher elevation tended to maintain a favorable environment for a large bison that had disappeared elsewhere. There were two campsites that contained parallel-flaked points, which prove the presence also of Plano materials (W. Boyd, 1949:41; Renaud, 1935a:6). The total extent of the two Early Prehistoric complexes in the two parks is unknown, but the presence of the diagnostic point types indicates that either Plains cultural materials or peoples or both of the Paleoindian period entered this Rocky Mountain area.

A number of sites of probable Archaic age were reported throughout the southern part of the San Luis Valley. In 1942 Renaud defined the Rio Grande culture, a complex with Middle Prehistoric traits (1942b:14-16, 18, 41, 1942d:33-36, 1944, 1946). From excavated sites it is known that the complex predates the appearance of Pueblo IV ware in the area, but it is uncertain how much earlier it appeared (Renaud, 1942d:33-36, 1946). However, projectile points of the Rio Grande culture closely resemble classic Pinto Basin points, which usually predate AD 200 (Wormington, 1957:168-169). This clearly indi-

cates that the materials fall within the Middle Prehistoric period. Unlike earlier horizons whose point types relate to the complexes in the east and the Great Plains, the Rio Grande culture shows stronger ties with materials in the Southwest and the Great Basin. Apparently, in Altithermal times the Desert culture tradition predominated over the Eastern Archaic tradition in the mountain parks.

An interesting aspect of Rio Grande culture is the presence of stone fences and stone circles at many sites (Renaud, 1942*b*:18, 1944, 1946:4, 13, 21, 32-33). They suggest that the stone defenses reported near Timpas Creek in the northwest Chaquaqua Plateau district (Tatum and Dondelinger, 1945:13) and stone barriers of the southwest Chaquaqua Plateau district may be of the same age and possibly of the same cultural affiliation. The tradition of crude stone walls that appear later in Graneros and Apishapa horizons may have originated here; but the continuity of a stone masonry tradition from Rio Grande culture to Graneros focus cannot be demonstrated.

There is some evidence suggesting that Plains Woodland peoples may have occupied the San Luis Valley. Parker focus materials were reported from the Alamosa area (Withers, 1954:2). There were four campsites with cord-marked ware that may date within the Plains Woodland horizon (J. H. Gunnerson, 1960:234; Museum of New Mexico), but one of the sites contained Taos Incised, Taos Tooled, and plain gray ware, which suggest a late Woodland, or post-Woodland occupation for the site and perhaps for the others as well (Museum of New Mexico).

No Plains Woodland stone enclosures are known with certainty to exist within the two parks, but there is one possible site, NM 265, that may be related to the Graneros focus. On the southern edge of the San Luis Valley in New Mexico and along the Rio Grande a small irregular enclosure with some brown ware has been reported (Renaud, 1942*b*:14, 21). The enclosure may be a Middle Prehistoric structure, but the pottery, possibly a trade ware, is obviously Late Prehistoric. Brown ware was produced over a long period of time in the Southwest, but in the area nearest the San Luis Valley where it was produced, the upper San Juan River, it was made between AD 1 and 700 (Dittert *et al.*, 1963). This is the most likely source of the pottery; if the stone enclosure is associated with the ware, its occupation would fall within Plains Woodland times.

NM 265 may be an outlying site of the Los Pinos phase of the upper San Juan River Valley. Its geographic position lies marginal to the San Luis Valley and is close to the area in which the Los Pinos phase originated and flourished. Los Pinos houses were similar to those of Graneros, having a saucer-shaped floor and a stone, or cobble, apron around the periphery of the structure; the apron may have served as a foundation. The houses were clustered on terraces above water courses. They were near arable land, and there is some evidence that corn was raised. After AD 400 and during the succeeding Sambrito phase of the upper San Juan, pithouses, some with ramp passageways, appeared (Dittert *et al.*, 1963:2-5). Both Los Pinos and Sambrito types of structures were found at the Graneros site and George W. Lindsay Ranch site (Withers, 1954:3; Nelson, 1971:5-7), which date at AD 450 or later, or at a time when the simple cobble

rings were replaced by pithouses in the upper San Juan Valley. Los Pinos phase materials may have influenced strongly transitional Woodland materials or perhaps the early Parker focus and resulted in the development of the Graneros focus and an early Panhandle tradition. If such occurred, it is likely that horticulture also was introduced from the upper San Juan River Valley or the middle Rio Grande into the Plains by the fifth century. It is possible that at this time, AD 400 to 500, a simple horticultural horizon consisting of small villages of enclosures or enclosurelike structures with a poorly developed ceramic industry may have existed in nearly all of southern Colorado, both east and west of the Continental Divide. Nevertheless, two distinct prehistoric cultures would share the tradition, one east of the Continental Divide and north of the Rio Grande Gorge, which was oriented basically toward the Plains, and the other west of the Divide, oriented toward the Southwest. Interaction between the two groups may account for some artifact exchange in the Upper San Juan; small triangular projectile points and the bow and arrow may have been introduced into the Southwest by Woodland peoples. The Woodlandlike pottery found in Largo phase sites of north-central New Mexico may be the result of trade or influence from the nearby San Luis Valley late Woodland peoples.

The weakness in the theory of an early horticulture cotradition lies in the absence of definite Graneros sites in the San Luis Valley. Some enclosure sites that appear to belong to the Apishapa stage may well be of Plains Woodland age. A few of these are located in the western part of the valley only 30 miles from the upper San Juan River sites.

A number of sites clearly are affiliated with the Apishapa focus. There are three major concentrations of stone enclosure sites in the San Luis Valley: one with six or more sites lies above the junction of the San Luis River and Saguache Creek near Saguache, Colorado (Huscher and Huscher, 1943:8-12; Renaud, 1935a:23-26, 1942c); a second with two sites is located in the western part of the valley along the north fork of the Rio Grande (Huscher and Huscher, 1943:13-14); and a third with three (Pearsall, 1939:7-9; Renaud, 1942b:10, 12, 20, 1946:21-22) or perhaps even eight sites is situated in the southern part of the valley on the Rio Grande in Colorado and New Mexico (1942e:19-20). A few enclosure sites are located on the upper Saguache Creek. In the upper Arkansas Valley stone enclosures have been reported near Buena Vista (Huscher and Huscher, 1943:27) and Cotopaxi, Colorado; these sites provide a connecting link for a chain of Apishapa sites between the Chaquaqua Plateau and the San Luis Valley.

In the San Luis Valley there were four stone enclosure sites that had barrier walls, or fortifications (Huscher and Huscher, 1943; Renaud, 1946). Most enclosures were on terraces or mesa points above water courses at locations where farming was possible. Anywhere from one to 40 enclosures were found at a site; they were scattered about the site in the usual random manner (Huscher and Huscher, 1943, pl. 2) that typifies the Apishapa village arrangement. Enclosures were constructed of local stone, most often basalt blocks. Most rooms were circular or oval in outline, but some were D-shaped (Huscher and

Huscher, 1943:8-14) and resembled those found near the junction of the Purgatory River and Chacuaco Creek on the southeastern Chaquaqua Plateau. A few rooms were contiguous; others were built against natural outcrops (Huscher and Huscher, 1943:11-13). Some sites referred to as antelope traps also may have been enclosures built against natural formations; these structures had superstructures built of cribbed and leaning timbers (H. Boyd, 1940:28-34).

A number of rock shelters had barrier walls; unidentified pottery often was found within them (Pearsall, 1939; Renaud, 1942*b*:7-8). One shelter apparently contained a stone enclosure. The site had maize remains, indicating the probability of horticulture. Associated pottery at the site was described as Pueblo (Hurst, 1939, 1940); consequently, there is some doubt as to whether the maize was raised by Apishapa peoples or by Pueblos, who may have invaded the valley in later times.

A few campsites containing Pueblo pottery also had cord-marked or Plains pottery (Renaud, 1935*a*:10; J. H. Gunnerson, 1960:234). Cord-marked ware was reported from only one stone enclosure site; but Pueblo ware appeared at three, one of which contained Chaco 2 ware (Renaud, 1942*b*:12-20) that assisted in dating the site at AD 1100 to 1200. Other sites contained various pottery described as plain or micaceous ware (Huscher and Huscher, 1943:8-14); the latter type is probably Pueblo II or Pueblo III trade ware similar to that found in the Rio Grande Valley immediately to the south of the district (Bullen and Bullen, 1942:57-64).

Despite frequent reports of Pueblo ware being found in the San Luis Valley, it is unlikely that Pueblos actually occupied the area or even used it temporarily as hunting grounds. As some have noted, no Pueblo structures have been found in the area (Ellis and Brody, 1963:24); the quantity of Pueblo sherds found at any one site seems to fall short of the usual amount at pure Pueblo sites.

Pueblo abandonment of the upper San Juan Valley in the Late Arboles phase (about AD 1050) and subsequent migrations southeastward to the Taos area and beyond seem to have bypassed the San Luis Valley. At this time the valley was in the hands of the defense-minded Apishapa peoples. An origin myth of the Taos Pueblos states that they (the Taos) originally settled on the Red River north of Taos and south of the San Luis Valley before moving to the Taos area. Supposedly, their later move was due to attacks by giants. The "giants" later attacked them again in their new home, burning their pueblo and forcing some to move eastward over the mountains, others to move south to El Paso, Texas, and the remainder to settle in the present pueblo of Taos. According to the myth, the giants returned again about AD 1400 and settled nearby, remaining there until the arrival of the Spanish (Gatschet, 1892:191-192). Allowing for the usual mystical misrepresentation in such myths, this account may vaguely recall conflict between the prehistoric Taos people and Apishapa people. To the Taos, a taller people of a different ethnic background might appear as giants and not completely human, as only the Taos could be. That the giants came from the north (*i.e.*, San Luis Valley) seems obvious, inasmuch as the Taos retreat was to the south. If the engagements on the Red River and at Taos occurred 900 years

ago, it might account for the entry of Pueblid people into the Trinidad, Colorado, area east of Taos in the eleventh century (Baker, 1967:215-216), as well as the linguistic separation between northern and southern Tiwa and the southward migration of the latter to Isleta, New Mexico (and not to El Paso, Texas), about AD 1000 (Ellis and Brody, 1963:324). The later settlement of the giants in the Taos area may have resulted from the abandonment of southern Colorado in the thirteenth and fourteenth centuries by Panhandle people who were moving south and eastward; these settlements may have consisted of temporary trading posts only.

Whether or not the giants to the north were real, Pueblo contact with the occupants of the San Luis Valley over a long period of time is proven by the presence not only of Southwestern trade ware, but also obsidian, presumably from the Tres Piedras region 30 miles northwest of Taos (Renaud, 1946:25), and turquoise (Hurst, 1940:10) from the Cerrillos area 80 miles south of Taos (Kidder, 1932:103). The exchange was not one-way, for the Panhandle peoples probably introduced new stone artifact types, such as the small, triangular, side-notched point, into the Southwest.

Fremont culture, northwest of the parks, and Panhandle culture bear a general resemblance to one another. Generalized traits, such as small villages with circular stone structures, horticulture, a heavy reliance on foraging, and refined chipped stone industry, are common to both; but a closer examination indicates that the relationship between the two is superficial. A partial checklist of 33 Fremont traits provided by H. M. Wormington (1955:172) shows that only 14 are shared by the two cultures; eight of these, such as corner-notched and side-notched points, are too widely distributed to be useful for denoting relationships, and four others have a random distribution among Panhandle foci and cannot be considered as universal characteristics of the culture. Only two traits, vertical slab foundations and dry-laid masonry circles, seem to be shared frequently by both cultures; but slab foundations occur in different contexts in the two cultures, and the circles appear to be nonfunctional among the Fremont. Apparently, Fremont and Panhandle developed in relative isolation to one another with very little interchange.

Panhandle culture probably began to decline in the upper Arkansas Valley and the San Luis Valley in the fourteenth century. The area may have been retained as a foraging area into the fifteenth or sixteenth century. A rock shelter with a barrier wall contained Pueblo ware (Bandelier Black-on-Gray) that dates the occupation of the site in the fifteenth century. However, it is not certain what group occupied the shelter.

Some sites in the lower San Luis Valley have been designated as Dismal River sites because of the presence of micaceous ware. Because the sites also contained cord-marked and various Pueblo III wares (J. H. Gunnerson, 1960:234), it is more likely that the micaceous ware is also a Southwestern type. The sites probably predate the arrival of Apaches in southern Colorado; in fact, Apaches are not reported in the San Luis Valley until the mideighteenth century (Schroeder, 1965:60-61).

The first mention of Apaches north of Taos in northern New Mexico was in AD 1601 (Schroeder, 1958:2). Prior to 1598, the area to the north of the Apache in the San Juan Valley was occupied by Utes; perhaps the latter already had penetrated the San Luis Valley to the east, inasmuch as it is known that they traveled along the Chama River to the east of the San Juan River at this time (1960:54). At any rate, the Utes remained the chief residents of the area until the late nineteenth century (1960:73), when Euro-Americans established full control of the mid-Southern Rocky Mountains.

PARK PLATEAU

The Park Plateau forms an elevated area lying at the foot of the east side of the Rocky Mountains and rising 500 feet above the western slope of the Chaquaqua and Las Vegas plateaus that border the district on the north, east, and south (Fenneman, 1931:40-41). Unlike most areas adjacent to the Chaquaqua Plateau, evidence of Late Panhandle occupation is scarce or absent; instead, throughout much of its Late Prehistoric period, the Park Plateau shows evidence of occupation by Puebloid peoples.

The northern part of the Park Plateau in Colorado is drained by the Purgatory River; the southern part in New Mexico, by the northwestern tributaries of the Canadian River, such as the Red, Vermejo, and Ponil rivers. These streams rise in the Rocky Mountains and are fed by melting snow, which results in a relatively steady and predictable volume of water that is not diminished until the streams reach the porous, sandy stream beds on the Chaquaqua and Las Vegas plateaus. The predictable nature of the water supply would be conducive to ditch-irrigation farming and served as an attraction to pioneering Southwestern farmers.

No sites of Early Prehistoric horizons have been noted on the Park Plateau, but private collections from the district have many Folsom and parallel-flaked points that suggest occupation of the Plateau occurred during these early horizons. At present there are no reports of Middle Prehistoric sites or materials, but additional research on the Plateau probably will disclose their presence.

There are three reports of the recovery of Woodland sherds on the Plateau (G. R. Baker, 1964*b*:10; Nelson, 1966:85); however, the references located only two sites. One site was reported to be a few miles southeast of Trinidad, Colorado, on the north side of Raton Pass (Nelson, 1966:85); the other, a few miles west of Raton at the south end of the Raton Pass (Museum of New Mexico, LA 1367). The proximity of the Woodland ware to stone enclosure sites in Raton Pass suggests that these structures also may be of Plains Woodland affiliation.

There are four stone enclosures known in the district; three are located on the north side of Raton Pass (G. R. Baker, 1964*c*), and one is along the north side of the upper Purgatory River not far from the Raton Pass (Dick, 1963:5). Two of these sites have been excavated (G. R. Baker, 1964*c*; Dick, 1963:5), but the excavators were unable to determine the exact nature of the sites. These sites consisted of one to three circular structures with stone foundations of horizontally placed, dry-laid boulders. One excavated site, TC:C9:113 (Trinidad State

Junior College Museum), contained a possible partitioned structure similar to one in the southeastern district. A room at this site had two postmolds, suggesting the presence of roof supports; the other four rooms at the two excavated sites had no evidence of postmolds (G. R. Baker, 1964c). All sites were located on high terraces above the winding flood plains.

Material was sparse at these sites; but at the site with the partitioned structure, TC:C9:113, corner-notched arrowpoints were predominant. Only slab or basin metates and ground slabs were recovered; typical trough metates of the Southwest did not appear. A corncob was recovered in one postmold (G. R. Baker, 1964c), indicating that the occupants of the site probably farmed.

The settlement pattern, architectural style, and ground and chipped stone artifacts indicate that the sites are affiliated in some way with Panhandle culture. The predominance of corner-notched points further suggests that occupation may have predated AD 1000; consequently, the sites may be components of the Graneros focus. Plains Woodland occupation of the district probably continued until the arrival of Puebloid peoples, which postdated AD 900 (Breternitz, 1969:114); but most sites in Raton Pass lay in a locale that was neglected by newcomers. Panhandle people may have been in residence in the pass contemporaneously with Puebloid peoples in the nearby upper Purgatory Valley.

It is generally agreed that there was a great expansion of Pueblo culture and population in the middle Rio Grande Valley between AD 1000 and 1100; with it came migration to the east beyond the Sangre de Cristo range to the Park Plateau (Wendorf, 1960:59). However, Pueblo I people dwelling in pithouses had settled in the Taos area prior to the great expansion, or between AD 900 and 1100 (Ellis and Brody, 1963:323); possibly some migrations eastward had occurred at this time, or prior to the great expansion.

Two pithouse sites in the upper Purgatory Valley have been reported; both were excavated (G. R. Baker, 1964d; Dick, 1954:5). One site had a circular, semisubterranean pithouse with 24 postmolds in the floor. This structure (G. R. Baker, 1964d) and the pithouse from the other site belong to a nonceramic phase (G. R. Baker, 1964d; Dick, 1954:5), or at least no ceramics were found. Other associated material has not been reported.

South of the Purgatory on the Ponil River a small circular structure of wattle and daub, a jacal, was located and excavated. It is associated with Pueblo pottery of the AD 900 to 1100 period (Lutes, 1959:61-66). The structure seems to be similar to contemporaneous structures found in the Rio Grande Valley near Santa Fe (Wendorf and Reed, 1955:14) and may indicate influence or migration from there. Another pithouse was located on Cimarron Creek (J. H. Gunnerson, 1959:146). The Purgatory and Cimarron pithouses and the Ponil jacal lend evidence that Puebloid occupation on the Park Plateau occurred prior to the eleventh century expansion.

Sometime after AD 1000, a new wave of migrants entered the Taos area and introduced unit-type dwellings (Ellis and Brody, 1963:323). Perhaps, as the Taos myth indicates, harassment by "giants" led some immigrants to move eastward over the mountains (Gatschett, 1892:192). Whatever the reason, Pueb-

loid peoples with unit-type dwellings appeared on the Park Plateau between AD 900 and 1300, dates confirmed by radiocarbon assays and the presence of dated Southwestern trade ware (G. R. Baker, 1967:215-216; Breternitz, 1969:114; Ireland, 1971:49-50).

The new arrivals settled along river courses where ditch-irrigation farming could be practiced. House sites were located on lower terraces a short distance above the flood plains and farm lands. The villages usually consisted of rectangular, multiroom, symmetrical structures in which one large rectangular room was joined along the outside by smaller rectangular rooms. The rooms were separated by partitions, suggesting that the entire structure, or most of it, was planned before construction; however, some rooms appear to have been added following major construction (Ireland, 1971:38-39). The walls were built of horizontally placed slabs held together with ample mud mortar or with mud alone (Dick, 1963:1); occasionally, mud plaster was used on the interior of the walls. Apparently walls rose to heights of five or six feet, and one building may have had a second story. The rooms were roofed with beams covered with mud (G. R. Baker, 1964*d*). Doorways were low tunnels with lintels (Dick, 1963:1) that sometimes were supported by upright slabs (G. R. Baker, 1964*b*:13). Located in the center of the room was a mud-lined, basin fire pit; subfloor cists appeared in rooms (Dick, 1963:1).

Chipped stone artifacts were made of hornfels, a metamorphosed shale; cryptocrystalline quartz was seldom used. Ground stone tools included slab, basin, and trough metates and large, rectangular manos. The local utility ware consisted of coiled plain (Sopris) or basketry-impressed pottery (Dick, 1963:2-3), some of which was incised or punctated (Alpers, 1963:40-41). Trade ware from the Southwest consisted of Taos Gray, Taos Black-on-White, and Kwahe's Black-on-White types (G. R. Baker, 1964*b*:12-14); on the southern part of the Plateau, Wingate Black-on-Red (Alpers, 1963:40-41), Red Mesa Black-on-White, Santa Fe Black-on-White, Taos Incised, and Plain Brown (Museum of New Mexico) were added to the list of trade wares. Cord-marked ware also appeared, and it, too, is considered a trade ware. This ware is common among Upper Republican sites (Dick, 1963:3); on the southern part of the Plateau it is present but rarely encountered (Wendorf, 1960:10). Cord-marked ware is referred to as Upper Republican (G. R. Baker, 1964*b*:12), but it admittedly differs somewhat from the latter (Dick, 1963:3). A cord-marked rim-*sherd* recovered from one site was noticeably everted (Baker, 1964*d*); more than likely, most *sherds* were of the Borger cord-marked type.

Puebloid burials were similar to those among the Apishapa. Bodies were placed in pits or houses in a flexed or semiflexed position. Unlike Apishapa, pottery accompaniments were found with some burials (Dick, 1963:3).

At least 19 Pueblo structures have been reported in the upper Purgatory Valley (Baker, 1964*d*; Dick, 1963:4-18), and on the south part of the Plateau three more are known (Baker, 1964*b*:7; J. H. Gunnerson, 1959:147; Lutes, 1959:59-60). Rock shelters were also used; these often produced perishable materials, including sandals, basketry, and maize (Lutes, 1959:59-60). Some

rock shelters had stone barrier walls, and one contained a mud wall (G. R. Baker, 1964*b*:8). There are six shelters known to have been occupied at this time (Baker, 1964*b*:6-8; Dick, 1963:8; Lutes, 1959:60); seven campsites contained either Sopris Plain or Pueblo trade ware or both, suggesting that they were used during this horizon (G. R. Baker, 1964*b*:7, 1964*d*; Dick, 1963:5; Museum of New Mexico, LA 929, LA 3307, LA 3308).

Southwestern prehistoric development on the Park Plateau is referred to as Pueblid because of the negative aspects of the culture. Such typical traits known among the Rio Grande Anasazi as kivas, painted pottery, full-grooved mauls, and artificial occipital deformation are absent on the Park Plateau (Lutes, 1959:66). Perhaps the migrants arrived in the district before these traits became widespread in the Rio Grande, or before AD 1050 (Wendorf and Reed, 1955:142).

Superficially, the Pueblo sites resemble those of the Apishapa; but closer inspection reveals many differences. The Park Plateau Pueblos were preplanned, rectangular, multiroom buildings on low terraces, whereas Apishapa structures were random, circular, and often single rooms on high points. Pueblo masonry was horizontally placed, mud bound, and full wall height (up to six feet); Apishapa masonry was vertically placed, dry-laid, and foundational. The Pueblid people had surface doorways with lintels; the Apishapa people had stone wall defenses. The Pueblos had crude, chipped stone artifacts of hornfels; snub-nosed scrapers and bifacial knives were rare. Apishapa chipped stone artifacts were finer and more varied and usually made of cryptocrystalline quartz or quartzite. Apishapa lacked the trough metate and large, rectangular mano, whereas the Pueblid people apparently did not use fixed mortars. Ditch irrigation farming probably was employed by the Southwestern people, whereas Apishapa people relied on flood-water farming and perhaps more foraging activities. Despite the slightly superior technology of the Park Plateau Pueblid people, their villages appeared to be smaller, consisting of three to 20 rooms. In contrast, some Apishapa villages contained 30 to 40 rooms. The architecture and ceramics of the Pueblo sites give the impression of a people with an outlook toward permanent settlement who would devote much time to planning, constructing, and manufacturing. The impression gathered of Apishapa people is one of a people with a casual outlook; construction was done with the expectation of moving in the near future.

During the thirteenth century, many Pueblo clans in the Taos area reputedly united to form new and larger Pueblos. According to one Taos myth, among those who joined in the consolidation were people who had formerly roamed the plains to the east (Ellis and Brody, 1963:323-324). It appears that the Pueblid population had abandoned the Plateau at this time; apparently Pueblo expansion eastward failed to extend beyond the Park Plateau.

There is insufficient evidence to indicate that Apishapa people ever occupied the Plateau, although one site on the upper Purgatory may belong to this focus. The site contained an area with a number of bell-shaped storage pits associated with cord-marked pottery (G. R. Baker, 1964*d*). Another site near

Raton Pass contained stone cists with a number of artifacts, including a catlinite needle (Tatum, 1946:5); the site may have been used also by Apishapa people. Apishapa contacts with the Plateau were probably more in the nature of trade than actual occupation. When Pueblويد people abandoned the district, Apishapa people, subject to the same pressures, probably were abandoning adjacent areas to the north, east, and west.

No earth rings have been mentioned among the sites on the Park Plateau, but micaceous-tempered ware appeared at one campsite on the upper Purgatory; it may well be Dismal River pottery; otherwise, archaeological evidence of protohistoric occupation is totally lacking here.

The ethnohistorical record indicates that the district was occupied in the early eighteenth century by various Jicarilla Apache bands. By 1719, the Plateau was falling under the control of the Comanche (Thomas, 1966:126). Eventually Utes occupied the area (Schroeder, 1965:54) and continued to control or use it as late as 1876 (Taylor, 1964). A few tipi ring sites were found in the upper Purgatory, which may provide evidence of the presence of horse nomads (Dondelinger and Tatum, 1942:4).

LAS VEGAS PLATEAU

The Las Vegas Plateau forms the southern counterpart of the Chaquaqua Plateau; topographically, it consists of the same type of mesa-steppe-canyon terrain. The Raton mesas form the northern limits; the Park Plateau and Sangre de Cristo foothills, the western limits. The Canadian escarpment north of the Canadian River forms the southern boundary, and the eastern boundary blends into the southern district of the High Plains of the Texas and Oklahoma panhandles.

The Las Vegas Plateau contains a varied and complex array of archaeological materials that are not yet fully understood. Because the two major eastward-flowing rivers of the district, the Dry Cimarron and the Canadian, provide direct routes between the Great Plains and the Southwest, a knowledge of the prehistory of this district is most significant to understanding the interaction between the two major culture areas. Nonetheless, previous research on the Las Vegas Plateau has not succeeded in clarifying the issue. Panhandle materials are present in the district, and, certainly, the culture played a major role in the interareal exchange during Late Prehistoric times.

The Las Vegas Plateau played an important part in revealing the existence of the Paleoindian stage; the first evidence of this stage was recognized at the Folsom site in the northern part of the district (Wormington, 1957:23-29). The proximity of two other important Paleoindian sites, San Jon and Blackwater Draw (Wormington, 1957:47-51, 113), to the Plateau also reflected the importance of the district in Paleoindian studies.

The earliest horizon of the Early Prehistoric period, the Llano Complex, is represented by Clovis points, which have been reported from two sites, one near Bueyeros and the other on the Carrizo Creek, New Mexico (Baker and Campbell, 1960:79-80). The succeeding Lindenmeier complex with its diagnostic

Folsom points is somewhat better represented. In addition to the Classic Folsom site near the Dry Cimarron (Wormington, 1957:23-29), sites are known on the Canadian River (Hammack, 1965:19-21), Ute Creek, and in the vicinity of Logan, New Mexico (Baker and Campbell, 1960:81, 84). Points representing various Plano complexes and horizons of the 8000 to 5000 BC period were encountered at seven sites (Baker and Campbell, 1960:81-84; Lister, 1948:37; Steen, 1955*a*, 1959:46). At one excavated site, Pigeon Cliffs, a Daltonlike or fluted Meserve point was found beneath a level dated at 6000 BC (Steen, 1959:46).

Middle Prehistoric materials appear at an early date on the Las Vegas Plateau. The dated level at Pigeon Cliffs contained an Archaic point as well as microblades, a small scraper, and remains of an extinct species of bison (Steen, 1955*a*, 1959:46). The Archaic material is contemporaneous or even earlier than Frederick complex material of the Plano horizon, which dates between 6000 and 5000 BC and is found just south of the Plateau in the Llano Estacado. The two dissimilar complexes may reflect the environmental distinctions between the two districts. The level, grassy, and drier Llano Estacado may have had large numbers of grazing animals that encouraged local occupants to remain big game hunters and producers of finer Lanceolate points for a longer period of time than those occupants of the canyon studded and better watered Las Vegas Plateau. The latter district with its canyon terrain would be more suitable for hunting smaller game and collecting wild plants.

Late Archaic material appeared frequently in rock shelters and open campsites in and near the Dry Cimarron drainage (Renaud, 1930:136-139; University of Denver, F:4:2; Museum of New Mexico, LA-6555), two caves on the Canadian River (Hall, 1938:1-6; Hammack, 1965:45), and two campsites along Ute Creek (W. E. Baker and Campbell, 1960:80-81).

Although the district is important for Early Prehistoric remains, it is apparent that either a new culture or people or both arrived at a relatively early date and established an Archaic or Desert tradition. The late stage of this tradition contains materials that can be duplicated on the Chaquaqua Plateau; the two districts seem to share in a common cultural development.

E. B. Renaud (1929) reported his excavations in the Dry Cimarron River Valley and defined two local complexes, a Basketmaker horizon and an earlier Fumarole culture. The material for the two complexes was removed from rock shelters, and although the two initially appeared quite distinct, a closer review indicated that the major differences between them related to the absence or presence of perishable materials. Since the material for the Fumarole culture was removed from soils that apparently were subjected to moisture, no perishables were recovered; the nonperishable material from the Basketmaker caves of the Oak Creek, New Mexico, and the Kenton, Oklahoma, areas basically was similar to that of the Fumarole material (Renaud, 1930).

In the material found in the Oak Creek and Kenton caves and shelters were: knives, points, borers, projectile points, metates, one-hand manos, fixed bed-rock mortars, freshwater mollusk shell pendant, selenite pendant, fire-drills, red

painted sticks, coiled basketry, sandals, bone awls, bones of bison, deer, elk, pronghorn, and rabbit, wild plant material, squash, acorn-berry cakes, maize material, and corncob stick-holders (Renaud, 1930). A flexed burial of a woman was found at one site, Cave 6, in the Oak Creek area (Renaud, 1930:147). Except for the selenite pendant, acorn-berry cakes, and cob stick-holders, all material can be duplicated in dry shelters on the Chaquaqua Plateau that date into the Late Prehistoric period. The presence of maize in three caves, surface finds of small projectile points at Cave 3 near Kenton, and the lack of pottery suggests that the material was related more closely to a Plains Woodland culture than to Southwestern Basketmaker culture. A rock shelter along the Canadian River near Springer contained material similar to that from the Dry Cimarron; it also had a cord-marked sherd (Mera, 1944), which indicates that these complexes belong to a Plains Woodland or Late Plains culture. Not all material from the Dry Cimarron sheltered sites falls within these horizons; material from the lower levels, like that from Cave 5 on Oak Creek (Renaud, 1930:136-139), may date back to the Archaic. Three reported campsites contained projectile point types, Yarbrough, Ensor, Catan, Scallorn, Edgewood, and Palmillas, that are both late Middle Prehistoric and early Late Prehistoric; and Catan type is present at all three sites (University of Denver, NM:F:2:2, NM:F:4:6; Museum of New Mexico, LA 8120). The sites may belong to transitional Archaic or Plains Woodland stage. Most of the sites occupied during this stage were along the Dry Cimarron (Renaud, 1930) and Upper Canadian rivers (Hall, 1938:1-4; Mera, 1944; Museum of New Mexico, LA 1367), but three campsites containing cord-marked ware (J. H. Gunnerson, 1959:146; Museum of New Mexico, LA 1499, LA 803) were found farther to the southeast.

Two campsites, LA 1499 and LA 803 (Museum of New Mexico) with cord-marked ware also contained some brown ware, presumably Jornada Brown, a trade ware from south of the Canadian River; it is assumed that the cruder cord-marked pottery is the native ware. Jornada Brown was the dominant type in the Jornada Mogollon area from AD 900 to 1100, and continued to be made until AD 1200 (Jelinek, 1958:165). Unless LA 1499 and LA 803 were multicomponent sites, they probably were Late Plains Woodland sites. In two excavated rock shelters immediately south of the Canadian escarpment, stone tools characteristic of the Panhandle type and Jornada Brown ware sherds have been found in association; the sites, or site levels, have been dated between AD 1375 and 1550 (Dick, 1953*b*:271-282; Hammack, 1965:45), which seems a little too late, because all the points were unnotched or corner-notched types; the side-notched points common after AD 1000 are absent. These sites also probably date into the latter part of the Plains Woodland or Early Panhandle (Apishapa) horizon. The presence of Jornada Brown and absence of cord-marked ware indicate that the site may have been occupied by Jornada people, but the corner-notched points are straight-based as most pre-Apishapa types are, and not the convex-based types characteristic of the Jornada Mogollon (Lehmer, 1948). The culturally mixed industry in the Ute Creek-Canadian River area points to the difficulty in determining the boundary between the Panhandle and Jornada areas.

There has been no Pueblo pottery found in the Las Vegas Plateau sites predating AD 1000, and this adds to the difficulty in dating possible Plains Woodland materials. However, some obsidian and selenite found at the probable Plains Woodland sites indicate that trade with peoples in the Southwest occurred. Perhaps maize horticultural practices were introduced to the Plains Woodland via the Rio Grande, but it is equally likely that they were learned from cultural relatives to the north on the Chaquaqua Plateau.

There are no stone enclosures on the Plateau that are known with any certainty to have been occupied prior to AD 1000. A Plains Woodland focus, or phase, other than the Graneros may have occupied the district. When circular enclosures appeared on the Plateau, they usually were constructed of vertical slabs, a technique postdating AD 1000.

Apishapa materials on the Las Vegas Plateau were usually recognizable in the form of slab enclosures. A number of these were reported (Campbell, 1973), but few, if any, were described adequately; the associated material seldom was mentioned. The sites consisted of typical Apishapa villages located on high points above water courses; the enclosures numbered from one to 21 at a site. Structures were always circular or oval and never D-shaped or rectangular. At all but one site the foundations were a single row of vertically placed slabs. At Pigeon Cliffs, a slab enclosure had a foundational wall of two parallel rows of slabs (Steen, 1955a), a feature found in Antelope Creek structures (Krieger, 1946:42). Two enclosure sites may belong to the Plains Woodland horizon and predate Apishapa materials. A site near Mora, New Mexico, contained a circular enclosure with horizontally placed masonry (Moorehead, 1931); but on the Chaquaqua Plateau this method of construction continued side-by-side with placing slabs vertically. Another enclosure was found within Cave 2 near Kenton, Oklahoma (Renaud, 1930:127), and in association with materials of possible Plains Woodland affiliation; however, the enclosure may indicate that the presumed Woodland material really belonged to the Apishapa horizon, inasmuch as enclosures occurred more commonly in the later horizon and were not known to be present on the Las Vegas Plateau in Plains Woodland times.

There are more than 20 sites on or near the Las Vegas Plateau that had slab enclosures. Associated material was similar to that on the Chaquaqua Plateau except that pottery was encountered even more rarely. Apparently, Apishapa groups occupying the Chaquaqua Plateau south of the Purgatory River and onto the Las Vegas Plateau made less pottery than those north of the Purgatory. Cord-marked ware was found at only one possible enclosure and under dubious circumstances. An excavated slab structure on Ute Creek contained cord-marked ware as well as Late Pueblo III-Early Pueblo IV ware and Jicarilla, or Dismal River, pottery. The Dismal River ware was found within the structure, and, consequently, the other pottery may represent other components or be trade ware. Nine enclosures contained Anasazi or Mogollon (Jornada Brown) potsherds. This might suggest that the sites were occupied by members of these cultures, but the settlement pattern, architecture, and artifacts are distinctly Panhandle; it is more likely that the Southwestern ware constituted a common

trade item received by people who had a poorly developed ceramic industry. The total amount of Southwestern sherds falls below that expected at a site occupied by either Anasazi or Mogollon peoples. Another site contained an unnamed form of pottery that might relate to Borger cord-marked (Wiseman, 1972). Twelve enclosure sites had no sherds. It is the absence of pottery rather than the presence of cord-marked ware that suggests that the sites are affiliated with Panhandle culture rather than with Southwestern culture.

Cord-marked pottery with grooves, similar to Upper Republican ware, was recovered at a rock shelter, Cave 9, along the Canadian River near Wagon Mound, New Mexico. Associated with it were side-notched points (Hall, 1938:6-14). The two artifact types indicate that the shelter and perhaps two or three neighboring ones were occupied after AD 1000. Cave 9 contained corner-notched and unnotched arrowpoints and dart points; parts of a bow and arrows were recovered also. In addition, the site had fixed mortars, slab metates, one-hand manos, an Alibates snub-nosed scraper, drills, a freshwater shell pendant, sandals, fire-drills, wooden beads, a digging stick, and maize remains; the latter two items prove the existence of horticulture. A nearby cave contained a stone barrier wall. There were five other rock shelters on the Plateau that had pottery referred to as Plains ware, some of which may have been cord-marked. Two of these sites also had Pueblo pottery (University of Denver, NM:K:16:7, NM:K:16:2, NM:K:15:5; Renaud, 1942a:30). Some cord-marked (Museum of New Mexico, LA-803) or Plains ware (Mason, 1929:337; University of Denver) was found at nine campsites; at seven of these sites either Pueblo or Mogollon pottery or both were found (Mason, 1929:337; University of Denver; Museum of New Mexico). There were three campsites that had either side-notched points or alternately bevelled, diamond-shaped knives or both, which suggest that they also were occupied by Panhandle people.

Only a few sites had Southwestern pottery types characteristic of the period predating AD 1300, and only one, Loma Parada, had pottery dating as far back as the eleventh century; all three early sites were found along the western periphery of the Plateau in the mid-Mora River Valley or on the upper Pajarito Creek. Sites on the upper Pecos had no Pueblo trade ware, which suggests that the sites were occupied prior to Pueblo settlement of the region, or in the early eleventh century. Slab enclosures along the southern and eastern periphery had late Pueblo III pottery. In fact, two sites contained Glaze V ware, indicating that the sites may have been used sometime after AD 1600 (Kidder and Amsden, 1931:610).

The Glaze V ware shows that some sites may have been occupied into the Historic period. In fact, it seems likely that a horticultural group continued to occupy the Canadian River Valley in New Mexico and Texas for nearly a century after the Canadian and other streams to the northeast in the Texas and Oklahoma panhandles had been abandoned by Panhandle people of the Antelope Creek focus. This suggests that two divisions of Panhandle people developed from the Apishapa focus: 1) a progressive Antelope Creek focus that probably derived from Chaquaque Plateau peoples predating AD 1300 and occupied the Panhandle

district until AD 1450, and 2) a conservative Canadian River people who had comparatively small villages of circular slab-foundation houses and a poorly developed ceramic industry and who continued to occupy the middle Canadian, including parts of former Antelope Creek range, into the sixteenth century.

When the Coronado expedition crossed the Plains in AD 1541, it found Querecho Indians, the presumed ancestors of the Plains Apache, in the northwestern part of the Texas panhandle and Teyas southeast of the latter in the Canadian Valley (Schroeder, 1962:6-7). Some have considered the Teyas to be another band of Apache (D. A. Gunnerson, 1956:348-349; Harrington, 1940:530), but A. H. Schroeder (1962:7) noted that they raised maize and beans, hunted in the spring, lived in houses of straw, concentrated their villages along rivers, and dressed and painted themselves like the Quivirans; they were also enemies of the Querechos. Their cultural similarity to the Quivirans, the presumed ancestors of historic Wichita and possible descendants of Antelope Creek people, indicates that the Teyas were a Caddoan group and not an Apache group.

Members of Coronado's expedition were told at Pecos Pueblo that Teyas from the north had raided the Galisteo Basin, destroying seven Pueblos, and had attacked Pecos Pueblo 16 years before the Spanish arrival (AD 1525). These same people reportedly visited Pecos often. They spent the winter outside the village under the eaves and were not permitted to enter the Pueblo (Schroeder, 1962:8). The winter visits may have been repeated trading expeditions that visited many Pueblos. The occupation of a village near Taos about AD 1400 by "giants," according to the legend mentioned previously (Gatschett, 1892:192), may recall the founding of one of these winter trading villages.

Since Apaches are not mentioned on the Canadian River east of Pecos until AD 1581 (Schroeder, 1962:4), it appears likely that the sixteenth century occupants of the stone enclosures on the Middle Canadian were the Teyas.

Anasazi culture appeared in the Rio Grande in Basketmaker III times (Vivian and Clendenen, 1965:19-22), but occupation east of the mountains by Pueblos or their ancestors probably did not occur until after AD 900, and was confined largely to the Park Plateau until after AD 1050. However, some occupation by Anasazi people may have occurred prior to AD 1050 in the upper Mora River Valley. Excavations at Lynam Pueblo on the Mora River uncovered a floor of a structure that underlies the walls of the main Pueblo. It was suggested that the structure may have been circular; it apparently had a series of post molds around its edge. Excavation terminated before more could be learned of this structure (Lister, 1948), but the few features known recall the pithouses or jacales on the Park Plateau (Baker, 1964*b*; Lutes, 1959:61), which may have been pre-Pueblo III structures. However, there is no satisfactory evidence at present to indicate that any permanent Pueblo occupation occurred east of the mountains prior to AD 1000.

In Pueblo III times (AD 1050 to 1300), the Pueblos migrated eastward into the upper Pecos Valley, occupying the area between Las Vegas to the north and Anton Chico on the south (Kidder, 1932:2). In the upper Mora Valley, Lynam Pueblo probably was occupied during this period as a result of an

eastward migration from the Taos area; the site contained Pueblo III pottery types common in the area of Taos (Chaco 2, Kwahe'e Black-on-White) (Lister, 1948:41). The eastward movement resulted in closer contact between Panhandle and Pueblo peoples. The upper Mora Valley may have been occupied jointly by both groups, inasmuch as the Loma Parda enclosures contained some of the same pottery types, Chaco 2 and Santa Fe Black-on-White, (Renaud, 1942a:31) that were found in the nearby Lynam Pueblo. Contact with the upper Pecos Pueblos was substantiated by the presence of cord-marked pottery at the Arrowhead ruin, a Pueblo IV site near Glorietta Pass in the upper Pecos Valley (J. Holden, 1955:102-109). Exchange between the Plains and Pueblo peoples appeared to be casual until Late Pueblo IV times, or AD 1550, when there was a noticeable increase at Pecos Pueblo of Plains artifact types and Alibates flint. The trade apparently reached a peak after AD 1600 (Kidder, 1932:44), when the Las Vegas Plateau was occupied by historic Apache groups. The Plains are presumed by some to have exerted some influence upon Rio Grande Pueblos after AD 1300. Incised pottery, "Caddoan" vessel forms, and Plains tool types appeared along the Rio Grande in the Pueblo IV period (Wendorf and Reed, 1955:153-154).

During Pueblo IV, many Pueblo settlements were abandoned, and the occupied area east of the Rio Grande contracted. The upper Mora Valley probably was abandoned before the start of historic times; when the Coronado expedition arrived in the upper Pecos Valley in 1541, only one Pueblo, Pecos, was occupied. Apparently, Pueblo people were concentrating in larger villages as a means of defense (Kidder, 1932:4). Pueblos never seemed to have settled beyond the mountain valleys on the east side of the mountains. One barrier to their expansion into the steppes and canyons of the Plains was probably the presence of hostile occupants, the Panhandle people, who in Pueblo III times probably were expanding and consolidating their control on the Las Vegas Plateau. Other factors that may have arrested Pueblo expansion were the lack of an adequate and dependable ground water supply and the fickleness of the local precipitation. The large Pueblo villages required extensive farmlands, which, in turn, necessitated the presence of a considerable and predictable volume of water for irrigating fields. Such could not be obtained in the unpredictable streams of the Las Vegas Plateau where major stream beds at times had no water, and at other times were sustaining destructive flash floods. The Pueblos maintained an aversion to the Plains in historic times. Some contend that hunting expeditions entered the Plains, but there is no real evidence of such intrusions. Documented accounts of Pueblo excursions onto the Plains relate that they were accompanied by Plains residents, such as the Apache, who served as guides, guards, or captors in the case of refugee Picuris who fled in 1696 to Cuartelejo in western Kansas (Schroeder, 1958:9). Attempts to enter the Plains unescorted were disastrous; thus, the Pecos Pueblo punitive expedition around AD 1750 against the Comanche ended with all but one Pecos warrior being killed or captured by the enemy (Kidder and Rouse, 1962:81-86). In 1752, it was noted by the Spanish Governor Velez that the Pueblo regarded entry into the Plains as an extremely dangerous enterprise (D. A. Gunnerson, 1956:351).

Pueblo influence on Panhandle culture on the Las Vegas Plateau was not outstanding probably because complex Pueblo culture was, in general, not adaptable to the environment with which Panhandle people had to cope. The Pueblo pottery found on the Plateau was probably a trade ware acquired by Panhandle people who visited the Pueblos; little else appears to have been obtained from trade. However, the Southwest may have been the source of two characteristic elements of Panhandle culture. First, the concept of vertical slab masonry may have originated along the Rio Grande. Foundations of most rooms at LA 835, a Rio Grande Pueblo founded about AD 900, were of vertical slabs. The masonry style may have been accepted by Plains Woodland occupants of the Las Vegas Plateau and diffused northward and eastward from there around AD 1000. Secondly, the domestication of Harinosa de Ocho maize may have spread directly from the Rio Grande to the Las Vegas Plateau. Nevertheless, there is no direct evidence indicating by which route maize domestication spread to the Plains.

The appearance of Jornada Brown ware in sites scattered from the Ute Creek-Canadian River junction to the Texas panhandle indicates trade occurred between the northern Jornada Mogollon people of Tularosa Basin and elsewhere in southern New Mexico (Lehmer, 1948:84-86), and the Panhandle people. Sites in the middle Pecos Valley, east of the northern Jornada area and north of Roswell, New Mexico, consisted of hilltop village sites with vertical slab dwellings and micaceous brown ware pottery (Jelinek, 1958:160). The sites, which presumably date around AD 950 to 1100, may have been occupied by Panhandle people who adopted a Jornada ceramic industry, or by Jornada people who used Panhandlelike structures.

Two sites, one consisting of a fortified village with five circular slab enclosures and barrier walls and another with slab enclosures, were located west of the middle Pecos Valley in the Guadalupe Mountains. No ceramic material was found at either site (Mera, 1938:23-25); thus, it is not possible to determine their cultural affiliation. The lack of ceramics suggests a relationship with Panhandle materials. These sites point to the difficulty in establishing a clear cut boundary south of the Canadian River between the Panhandle and Jornada Mogollon culture areas until after AD 1350 when the Middle Pecos was abandoned (Jelinek, 1958:165), leaving a buffer zone between the Panhandle culture on the Canadian and the Mogollon on the Rio Grande.

As noted previously, the Las Vegas Plateau probably was occupied by the descendants of a local Panhandle division, the Teyas, until shortly before the arrival of Coronado's expedition of 1541. The Teyas settled along the Canadian River in New Mexico between AD 1300 and 1500 and probably were shifting eastward at the time that the Coronado expedition made contact with them on the Canadian River (Schroeder, 1962:7) or farther south near present-day Lubbock, Texas (Wedel, 1970:166). The void left by the abandonment of the Las Vegas Plateau was filled by the southward-moving Querecho Apaches, who were first noted by the Spanish in 1541 in the northwest part of the Texas panhandle and later in 1581 on the Pecos River near present-day Santa Rosa, New Mexico

(Schroeder, 1962:8). The Querechos and their descendants occupied the area until the eighteenth century, when retreating Jicarilla bands from the Chaquaqua Plateau and the High Plains, and later horse nomads, moved onto the Plateau and into adjacent districts (Schroeder, 1958, 1960).

There were a number of campsites containing micaceous ware located on the Plateau (Hall, 1938:4; Renaud, 1942a:30; J. H. Gunnerson, 1959:147; University of Denver), but it is not known whether the pottery was of Taos or Apache origin. Some was presumed to be Apache ware, but it probably was produced by the later Jicarilla and not by the nomadic Querechos; consequently, the sites probably date into the eighteenth and nineteenth centuries.

Tipi rings have been located in many places on the Plateau (Hall, 1938:4; Hammack, 1965; Renaud, 1942a:28; University of Denver), but, again, the cultural affiliation of these sites is unknown. It is assumed that most were occupied into historic times, but few, if any, were in use after 1875.

SOUTHERN HIGH PLAINS

The Texas and Oklahoma panhandles comprise the southern district of the High Plains physiographic section (Fenneman, 1931:11-22). This is the most significant district regarding prehistoric Panhandle culture, because it is here that the culture was first defined and most extensively studied.

In general, the southern district is lower and more level than the Raton section, which borders it on the west. Nevertheless, the major drainages (the Dry Cimarron, Beaver, and Canadian rivers) provide breaks in the otherwise monotonous flat plains; in general, the district is dissected more than the adjoining sections to the south, the Llano Estacado; the east, the Plains border; and the north, the Northern High Plains. Compared with the canyon terrain of the Chaquaqua Plateau and Las Vegas Plateau, the canyons of the Southern High Plains are not as steep, but instead are wider and have more extensive tracts of possible arable land. At least two-thirds of the district lies within the 20 to 25-inch rainfall belt, or east of the eight-inch summer rainfall line (Wedel, 1964:30-38). The precipitation and runoff and broad flood plains of the district are greater in extent than that encountered in the districts previously discussed; consequently, the southern district would prove attractive to a population from the drier western districts who had become reliant on horticultural pursuits.

Significant finds of Early Prehistoric materials have been made in the district. Clovis points were found associated with remains of an extinct species of elephant at the Miami site in the northeast Texas panhandle (Wormington, 1957:44), and Folsom points were reported from three major sites: at the Lipscomb site associated with remains of an extinct species of bison (1957:40); at the Nall site with Meserve points (Baker *et al.*, 1958:1-20); and at the Little Sunday site with Archaic materials (Hughes, 1955:66). Plano Complex materials were not reported as frequently as Lindenmeier complex materials, but the Meserve points at Nall site in the Oklahoma panhandle substantiated the presence in the district of some material from this complex.

Archaic materials have been reported from a number of sites (W. A. Davis, 1962:8, 13, 28; Hughes, 1955:65-66; Hughes and Tunnell, 1955). Three kill sites with Early or Middle Archaic materials and bison remains have been described (Hughes and Tunnell, 1955). Most Archaic sites contained projectile points and other materials characteristic of complexes found farther east in Oklahoma (Shaeffer, 1966:62-83) or farther south in central Texas (Suhm, 1958:63-89). However, with the exception of a few traits, such as the Clear Fork gouge, Lange dart point, and extensive bison hunting, most Archaic cultural materials from the southern district also can be duplicated with materials from the Chaquaqua Plateau. Apparently a common culture characterized by a balanced wild plant collecting-small game hunting subsistence pattern, atlatls and darts, crude percussion-flaked stone tools, and small open and sheltered encampments on elevations above or along streams were common throughout the Southern Plains in Middle Prehistoric times.

Plains Woodland materials have not been reported frequently from the Southern High Plains district. A few campsites along the Canadian River that contained materials such as corner-notched arrow points may be affiliated with this horizon (W. A. Davis, 1962:33; Hughes, 1962:65-84; Glasscock and Glasscock, 1955). Only the Lake Creek site has been reported as a Plains Woodland site. The materials here included Woodland pottery and Scallorn, Reed, and Fresno arrow points, as well as some dart points (Hughes, 1962:65-84). In general, the materials from the site approximated those from many different Plains Woodland foci, but the absence of stone enclosures suggests that it probably was not affiliated with the Graneros focus; in fact, there were no structures in the district known to be of Plains Woodland affiliation.

Two traits found at Lake Creek suggest that relations occurred to the east with the early Custer focus material of southwestern Oklahoma. The alternately bevelled, diamond-shaped knife and lime, or caliche, temper used in pottery appeared at the Mouse site in Oklahoma (Buck, 1959:16-31) and at Lake Creek; they did not occur in Plains Woodland sites in the southeast district of the Chaquaqua Plateau. Some materials found at the Mouse site were absent at Lake Creek, but this was probably because the Mouse site was a village site and Lake Creek was a temporary encampment; also, the Mouse site, which has been dated at AD 950 \pm 100 (Deevey *et al.*, 1965:132), may have been occupied slightly later than Lake Creek, and thus would have included some new traits. Nevertheless, trade ware from the Jornada Mogollon culture area (Jornada Brown) found at Lake Creek dates the site between AD 950 and 1300 (Hughes, 1962:75), and indicates that its occupation nearly was coeval with the Mouse site.

At present it is not known when Plains Woodland materials first appeared in the southern district. The presence of Scallorn points suggests that it may have been any time between AD 350, when the type appears in the Raton section to the west, and AD 700, when they appear in eastern Oklahoma (Bell, 1960:84).

The absence of villages may indicate that the district was used by Custer focus people as a marginal foraging area at a time when Graneros people were using the Las Vegas Plateau in much the same way.

The earliest dates obtained for sites with structures in the southern district fall within the twelfth century. This suggests that Panhandle expansion of the eleventh century on the Chaquaqua Plateau and the Las Vegas Plateau did not affect the Southern High Plains; but a few undated sites are remarkably similar to the typical early Apishapa sites found farther west. One site of this nature is Landergin Mesa; it has not been described in any detail, but a brief account states that it consisted of 22 separate, circular enclosures with foundations constructed of horizontally placed slabs. The houses were located in a small area atop a high, steep mesa. No barrier walls were reported, and the only associated material mentioned was cord-marked ware. Although the horizontal masonry suggests that the site could predate AD 1000, it was noted that the mantle of soil atop the mesa was too thin to serve as a brace for vertically laid slabs (Moorehead, 1931:114); consequently, if the masonry consisted of fallen slabs, it probably would postdate AD 1000. Landergin Mesa may have been the southeastern-most boundary of Apishapa settlement in the eleventh century.

Farther to the southeast in the Canadian drainage, 10 sites have been reported—the Conner site, Spring Canyon (Duffield, 1964:23-28, 48-79; W. A. Davis, 1962:10), Sanford ruin (Baerreis and Bryson, 1966:112; Deevey *et al.*, 1966:463), Saddleback (Haynes, 1932; W. C. Holden, 1933), Coetas (Studer, 1934:80-96), Alibates Hill, Alibates (Mason, 1929:328-330), Tarbox Hill (W. C. Holden, 1929), Antelope Creek (W. C. Holden, 1930:27; Johnson, 1939), PT-8, PT-25, and Arrowhead Peak (Green, 1967)—that contained circular, slab-lined enclosures. At all but one site, Sanford ruin, the circular structures were associated with rectangular, slab-lined enclosures, some of which comprise complex, multiunit ruins. At Tarbox Hill, a circular structure appeared to be contiguous with a rectangular multiunit structure (W. C. Holden, 1929, fig. 2), and at Saddleback ruin, circular rooms were incorporated into the multiunit structure (1933:pl. 11).

Sites with circular structures that have been radiocarbon dated usually fall between AD 1100 and 1300. The earliest Pueblo trade ware, Saint Johns Polychrome (AD 1000 to 1250), also appeared at a site with circular structures, Alibates or Antelope Creek ruin (Baerreis and Bryson, 1966:106). However, it is not known whether the dates apply to occupation of the circular structures or others at these sites. The only radiocarbon-dated site consisting solely of circular units was Sanford ruin; it has been dated at AD 1250 \pm 90. The site had one large, circular, slab-lined enclosure with adjoining smaller rooms (Deevey *et al.*, 1966:463). Spring Canyon ruins, which contained both a large rectangular room and a nearby smaller, oval structure, was radiocarbon dated at AD 1400 \pm 90 (Baerreis and Bryson, 1966:106), but the date was obtained from a midden near the rectangular room and probably dates the occupation of the latter structure.

In general, it appears that circular houses may have been occupied earlier than the rectangular ones, but continued to be used alongside the later types; they may have been revived as the dominant type (postdating AD 1450) following the period of greatest occupation. The Tierra Blanca site, southwest of the Canadian River center of settlement, consisted of a dozen single, circular, slab-lined

enclosures and contained Pueblo trade ware (Glaze II, IV, and V) (W. C. Holden, 1931:50-52), which suggest that it was occupied until after AD 1600 and perhaps as late as AD 1700 (Kidder and Amsden, 1931:610).

Circular slab-lined structures were more common in the western part of the district; none has been mentioned in reports concerned with Panhandle sites on Wolf Creek in the northeast Texas Panhandle nor on the Beaver River in the eastern Oklahoma Panhandle. The concentration of Apishapa-like structures in the western part of the district near the Raton section and the greater frequency of these circular enclosure sites in the earlier period of Panhandle occupation suggest that the district was occupied during the early expansion of the Apishapa focus. It is possible that local Plains Woodland occupants adopted the characteristic Apishapa traits, but the rapid increase in sites and population suggests that immigration into the southern High Plains had occurred.

There were at least eight sites that contained single, rectangular, slab-lined rooms; these included the Connor site, Medford Ranch (Duffield, 1964:23-48), Currie ruin, Roper (Baerreis and Bryson, 1966:111), Coetas (Studer, 1934:80-96), Stamper (Watson, 1950:13-27), 41 PT 22, 41 PT 24 (W. A. Davis, 1962:29), and Bates ruin (Moorehead, 1931:113). Four sites with single structures had radiocarbon dates, but one site contained other types of structures from which the date may have been obtained. The earliest radiocarbon date from a site with only single rectangular rooms, Currie ruin, was AD 1120 \pm 100. Two other similar sites dated at AD 1300 (Baerreis and Bryson, 1966:111). Apparently, rectangular slab-lined rooms were in use by the twelfth century and probably were more common than circular enclosures by the start of the fourteenth century. The change in floor plan style must have resulted from influence by neighboring Custer-Washita people in western Oklahoma, or Upper Republican people in central Kansas and Nebraska.

The most complex structured sites in the southern district consisted of rectangular structures that were partitioned into two or more units and apparently were replanned. As many as 33 units, or rooms, were found at one site, Saddleback ruin (W. C. Holden, 1933). The sites were generally larger than those that consisted of singular, separate rooms; but these complex sites often included nearby single, circular or rectangular rooms or both. The multiunit structures had a greater amount of masonry than the others. Spring Canyon (Duffield, 1962), Saddleback (Haynes, 1932; W. C. Holden, 1933), Coetas (Studer, 1934:80-96) 41 PT 13, 41 PT 14 (W. A. Davis, 1962:24), Gould ruin (Moorehead, 1931:97-101), Antelope Creek (Johnson, 1939), Alibates (Krieger, 1946:42-43), and Footprint site (W. A. Davis 1962:30; Green, 1967) had thick walls consisting of two parallel rows of either vertically or horizontally placed slabs or both with the space between the rows filled with rubble. Some of these sites also had two or more tiers of vertical slabs. Adobe commonly was used for mortar and wall plaster.

Most of the architectural traits found in the multiunit structures can be found on the Chaquagua Plateau, and traits such as partitioned rooms and vertical slab masonry might appear earlier on the western plateaus than in the Central

Plains. However, a new set of traits, such as preference for rectangular floor plans, four central post supports, central fire pit, subsurface storage pits, and tunnel entryways, may have been added in the southern district as a result of influence from the nearby Custer-Washita area of western Oklahoma where these traits had existed earlier (Bell and Baerreis, 1951:76). Other such traits as thicker and higher walls were probably a response to local environmental conditions. Locations for settlements in the district were not as naturally defensive as those on the Chaquaqua Plateau; consequently, the simple barrier walls so common at fortified villages on the Plateau had to be replaced by sturdier walls at villages that were open on many sides.

Some of the multiunit sites, such as Saddleback (W. C. Holden, 1933), Alibates (Mason, 1929:328-330), and Gould ruin (Moorehead, 1931:97, 101), had stratified floor levels in the rooms; this suggests that the sites were reoccupied a number of times. Refuse at these sites was more abundant than at the simpler sites, and, no doubt, the period of occupation was of greater duration. Most of the multiunit sites have been dated between AD 1300 and 1450, and it is assumed that during this phase most of the structures were constructed and occupied. The simpler circular and rectangular slab-lined enclosures also were used throughout the period and continued as a common type of habitation (W. C. Holden, 1930:51).

The increase in sites in this horizon suggests that additional migrants from the Chaquaqua Plateau entered the district in great numbers. Severe droughts were affecting wide areas of the Southwest (Wormington, 1951:80-81) and the Western Plains (Wood, 1967) in the thirteenth century. Wider canyons with more arable land and greater precipitation in the southern district probably served as a major attraction to drought-stricken horticulturalists of the western plateaus, who abandoned that area. Increased population meant increased competition for farmland, and this probably caused much of the population to concentrate in the larger and more protected multiunit villages.

The artifact inventory was basically the same during the AD 1300 to 1450 horizon as in the preceding horizon, but the Panhandle people of the southern district added some items unknown or infrequently encountered on the Chaquaqua Plateau. The alternately bevelled, diamond-shaped knife; bison scapula hoe blades; bison metapodial digging stick points; and bone rasps frequently were found at the Texas-Oklahoma Panhandle sites. There appeared to be a greater preference for Fresno points, snub-nosed scrapers, and square-flange drills. Nearly all these artifacts were known and preferred in the Custer-Washita and Upper Republican areas, and this reflects the influence that these cultures had on the Panhandle people, who were now in proximity to them.

During the latter phase, Pueblo trade ware and obsidian from the Southwest increased at Panhandle sites in the Southern High Plains as it did at Panhandle sites on the Las Vegas Plateau. Pueblo influence on Antelope Creek-Optima technology seems to be negligible; it appears to have had little influence on the architectural style and subsistence activities, except indirectly through earlier Apishapa culture. As many have noted, Antelope Creek and Pueblo similarities

are superficial, and the former is basically a Plains culture (Krieger, 1946:72-74; Lawton, 1966:99-100). Some minor architectural traits, the depressed central one-third of the floor and the raised altar or bench at the rear of rooms, may have resulted from Southwestern influence, but these features were found only at a few Panhandle sites, and their exact source in the Southwest is unknown.

In general, most Antelope Creek focus materials were confined to the present limits of the Texas and Oklahoma panhandles. One campsite, the Hubbard site, in western Oklahoma contained Panhandle materials (Shaeffer, 1966:56-61); this site may mark the eastern limits of the culture during the AD 1300 to 1450 horizon. Sites with Panhandle materials are known to the south in the Tierra Blanca drainage (Pearce, 1936:185), but there were few Panhandle materials in the Llano Estacado, south of Tierra Blanca Creek (Ellzey, 1966); apparently, the south rim of the Llano Estacado formed the southern boundary of Panhandle culture. In the middle of the fifteenth century, a severe drought affected parts or perhaps all of the Great Plains (Wedel, 1964:14), and, coincident with this, Antelope Creek culture in the southern district declined; it seems that another migration was underway. In the following period, no similar cultural materials appeared to the north or south, and the few Ute Creek-Canadian River Panhandle sites to the west appeared to be of local origin. However, northeast in the Arkansas Valley of central Kansas, archaeological materials have been found that are similar to Panhandle materials. The Central Kansas materials are located in the vicinity of the Great Bend aspect, which developed shortly after the decline of the Antelope Creek focus and continued into historic times (Wedel, 1964:105-107). It is assumed that the Great Bend aspect is an archaeological manifestation of historic Quiviran, or Wichita, culture (1959:587-589). The Great Bend area offered greater rainfall and more arable land to farmers who were faced with drought conditions, and it is reasonable to assume that they would take advantage of it.

Not all Panhandle sites were abandoned in the late fifteenth century. Tierra Blanca continued in use after AD 1600 (W. C. Holden 1931:50-52) The most likely historical group responsible for the few late sites was the Teyas, a group met by the Coronado expedition on or near the Canadian River in Texas in 1541. The Teyas had been in eastern New Mexico in years prior to 1541 (Schroeder, 1962:7; Wedel, 1970:166) and probably were shifting eastward on the heels of the migrating Antelope Creek people, the Quivirans. A number of groups of Indians located by the Spanish in Texas, Oklahoma, and Kansas during the sixteenth and seventeenth centuries may have been descendants or kinsmen of the Teyas (Schroeder, 1962:15-20) and perhaps ancestral to the Tawakoni, a southern division of the Wichita Confederacy found on the Brazos River of Texas in the mideighteenth century (Newcomb, 1965:250). Perhaps the early sixteenth century archaeological site on the upper Ninescaw River of south-central Kansas and the early eighteenth century sites on the Arkansas River near Newkirk in north central Oklahoma (Wedel, 1964:121, 146) were later villages of the Teyas.

The close cultural relationship between the Teyas and Quivirans suggests that they were two divisions of the same ethnic group (Schroeder, 1962:6-9).

The eastern position of the Quivirans in regard to the Teyas and their slightly more sedentary ways approximate the situation between the Antelope Creek focus of Texas and the Canadian Panhandle culture of New Mexico. The Quivirans are considered ancestral to Wichita groups that followed the Tawakoni southward to Texas in the early eighteenth century and settled on the Red River (Wedel, 1959:60-68).

By AD 1541 the Querecho Apaches had reached the Texas panhandle (Schroeder, 1962:8). The majority of these are believed by Schroeder (1960:5) to have become the historic Lipan Apaches. The Lipan (Cipaynes) were reported on the Canadian River of Texas in 1695 and by 1719 had moved farther south to the Red River (Schroeder, 1960:23). Over a 200-year period, the Apaches wrested control of the Southern High Plains from the Wichita groups.

Horse nomads entered the district in the early eighteenth century, and in 1717 the Comanche moved south and attacked the Lipan north of the Red River (Schroeder, 1960:22). The Comanche was followed by other groups of horse nomads, such as the Kiowa, Kiowa-Apache, and Cheyenne; the district became famous as a nineteenth century battleground of the Indians as they resisted white encroachment. The area witnessed many hard-fought engagements, such as Adobe Walls in 1874 and Palo Duro Canyon in 1875 (Wellman, 1947:108-111, 119-120). By the late 1870's the Southern High Plains had been cleared of its last aboriginal inhabitants.

There are no archaeological sites that can be assigned to the early Apaches. Many spaced stone rings have been noted (Moorehead, 1931, map by F. V. Studer), but none can be assigned to any specific group of horse nomads. They served only to demonstrate that late historic Indians were in the district, a fact substantiated more clearly by historical documents.

SOUTHEASTERN COLORADO PIEDMONT

The southeastern district of the Colorado Piedmont joins the Chaquaqua Plateau on the north and east. The western boundary is east of Fountain Creek, a southward-flowing tributary of the Arkansas, and the eastern boundary joins the Central High Plains near the Kansas-Colorado state line. The southeastern district is separated from the northern Colorado Piedmont by the Monument Divide, which extends eastward from the foothills to the High Plains and divides the Arkansas River drainage to the south from the Platte River drainage to the north.

The district consists almost entirely of a level, featureless steppe. A few low conical hills exist in the western region and some low, shallow canyons, tributaries of the Arkansas River, appear in the southern region. Only the canyons hold possibilities for the type of horticultural activity practiced by Panhandle people; consequently, village sites are confined to the southern limits.

Llano complex materials have been reported in the southeastern district (Nelson, 1969:118; Nelson and Breternitz, 1970:33), and two campsites with Folsom points, or Lindenmeier material, have been located (University of Denver, s:7:4, S:12:8); no sites with this material were excavated. There were at least eight sites with Plano material; most were campsites located in blowouts,

and they usually contained parallel-flaked points (University of Denver, U:14:5, S:12:9, S:12:8, U:2:3, T:8:3, AA:4:3; Wheat, 1961:59). One important bison kill site, the Olsen-Chubbock site, containing Scottsbluff, Eden, and Plainview points and other materials, has been excavated (Wheat, 1961:59, 1966:170). This and many other Plano sites indicate the importance of the district as a hunting ground during this horizon.

There have been no reports of Middle Prehistoric sites, but a few Plains Woodland sites are known. Four sites were reported that contain Woodland pottery (Nelson, 1967:78), and another had corner-notched points and cord-marked ware (University of Denver, T:3:10), which suggests that it also may be a Plains Woodland site. None of the sites has been described; it is not known with which Plains Woodland foci they are affiliated. Stone enclosures were not found, which suggests that they were not village sites of the Graneros focus; however, the sites may have been temporary foraging stations used by Graneros people.

Only two sites with stone enclosures were reported from the district. One, which was located along the north side of the Arkansas near its junction with Rule Creek, consisted of five single, circular rooms. There was no diagnostic material reported with the structures (Colorado University Museum, BN1); therefore, it is difficult to determine their age. Most likely, they comprised an Apishapa horizon village. Another small village consisted of an encircling barrier wall that enclosed six rooms. The rooms were in two sets of three circular, contiguous enclosures; each set was contiguous with the interior of the barrier wall; one set was on one side, the other on the opposite side. No diagnostic material was reported, but judging from the arrangement of the village, it also was an Apishapa site. The site was located on Rule Creek a few miles south of the Arkansas River. These two sites are the easternmost enclosures known from Colorado.

Although villages appeared only in the southern periphery of the southeastern district, a number of campsites containing cord-marked ware appeared in the steppes north of the Arkansas Valley or east of the Plateau (University of Denver, n.d.:T:3:10, T:4:4, T:3:8, T:2:4, U:13:10, BB:11:1). Many of these may have been Apishapa encampments, but because the pottery has not been described, the sites cannot be assigned to any particular focus. Upper Republican aspect earth lodges have been reported on Horse Creek (Steen, 1955b:18) and Cedar Point (W. R. Wood, 1971) near Limon, Colorado; campsites with cord-marked ware may have served as foraging stations for people from these villages rather than from the Arkansas Valley.

The presence of the earth lodges in the northern periphery of the southeastern Colorado Piedmont, only 50 miles north of the Apishapa area, provided an excellent opportunity for cross-cultural influence and explains why both cultures shared many traits. Such traits as side-notched arrow points, snub-nosed scrapers, and occasional use of incised rims on pots may have been passed to the Apishapa people by way of Upper Republican people who occupied the Colorado Piedmont. The earth lodges mark the southwesternmost extension of

Upper Republican villages; they were occupied probably in the twelfth or thirteenth centuries when most Upper Republican materials occur in the northern piedmont of northeastern Colorado (J. J. Wood, n.d.; W. R. Wood, 1971).

It is possible that some Southwestern traits, such as cultivation of *Harinosa de Ocho* maize and making of globular pots, may have been transmitted by Panhandle peoples to the Central Plains by way of the Purgatory River, Horse Creek, and Smoky Hill River drainages. Southwestern types of pottery have been found at two campsites in the district. One site contained coiled and basketry-impressed ware associated with cord-marked ware, and the other site had an undefined Pueblo pot (University of Denver, T:4:4, U:5:9). It is apparent that Southwestern trade goods reached this far north by AD 1300.

There have been no reports of earth rings in the southeastern piedmont, but one site containing Dismal River pottery has been noted on the Upper Horse Creek (Nelson, 1967:78); another site with a burial of a brachycephalic woman dated at AD 1550 has been located near Sand Creek (Tipton, 1967:14-20). Ethnohistoric documents of the early eighteenth century place various bands of Jicarilla Apache in or near the district (Schroeder, 1958:19-44; Thomas, 1966:16-21). By 1720, the Comanche had evicted the Apache from the area (Schroeder, 1958:30-44), and within a century other horse nomads (Kiowa, Kiowa-Apache, Cheyenne, and Arapahoe) also were occupying the district. A number of tipi rings have been found here (University of Denver), but they cannot be associated with any particular group.

The general region became the scene of intense conflict between Plains Indians and white men in the late nineteenth century. The battles of Sand Creek in 1864 and Beecher's Island in 1865 were two of the many engagements fought in or near the district (Wellman, 1947:69-74, 81-87) before the Indians were finally removed in the late 1870's.

SUMMARY

Llano materials and sites are reported from districts south and east of the Purgatory River, but few are known from the northwest Chaquaqua Plateau, southern Colorado Piedmont, and mid-Southern Rocky Mountain districts. Most Llano material consisted of Clovis points acquired from surface collections; only one site is known well, the Miami site in the Texas panhandle.

Sites with Lindenmeier material are more widespread than those with Llano material. Within the general area, there are at least 16 known sites with Folsom points. No sites or materials are reported in the southwest Colorado Piedmont and northwest Chaquaqua Plateau, but material probably exists and eventually may be brought to light. Some important Lindenmeier sites, Folsom, Linger, and Lipscomb, have been located and investigated in the area. Plano materials appear in all districts. Twenty-eight sites have been reported that contain some material from this horizon, and two important sites, Nall and Pigeon cliffs, have been excavated. Paleoindian complexes were probably replaced by Archaic complexes by 6000 BC in the canyon-studded areas of the Raton section and Southern High Plains district, but they seem to have persisted into later times in

the Colorado Piedmont and Llano Estacado steppes and the high parks of the mid-Southern Rocky Mountains section.

Middle Prehistoric materials have not been investigated as extensively as the earlier materials, but most districts have reported some; however, there are no sites reported for the Park Plateau or southeastern Colorado Piedmont. Archaic materials appear very early on the Las Vegas Plateau (*ca.* 6000 BC) and persist in most areas into the Christian era (*ca.* AD 200 to 500). The majority of materials from the eastern districts is affiliated with a Southern Plains Archaic complex, but those from the high mountain parks in the mid-Southern Rocky Mountains district resemble materials from the Desert tradition. Some Middle Prehistoric sites in this district have crude stone fences. Stone defenses, reported from the northwest Chaquaqua Plateau, and crude stone walls, located on the southeastern Chaquaqua Plateau, may prove to have some relationship to the fences in the mountain parks; no diagnostic material has been found or reported in association with these sites; therefore their affiliation remains undetermined.

On the southeastern Chaquaqua Plateau, Late Archaic materials are gradually replaced by Late Prehistoric materials, suggesting that the local population was undergoing culture change and not being replaced by new migrants. The circumstances concerning this change in other districts remain unknown at present, but some campsites on the Las Vegas Plateau contain mixed Middle-Late Prehistoric materials, which may indicate that they too are transitional sites; however, the sites may have more than one distinct component represented within them. In most areas it seems that Archaic materials are replaced by Late Prehistoric materials between AD 200 and 500.

The presence of pottery marks the appearance of the Plains Woodland horizon. On the southeast Chaquaqua Plateau, Woodland cord-marked ware is found associated with Archaiclike materials. This transitional horizon is similar to one that occurs earlier in the northern Piedmont of northeast Colorado. The horizon has not been noted in other districts.

Parker focus materials that include Woodland ware and large corner-notched points may be coeval with the transitional horizon. Parker materials have been found in the mid-Southern Rocky Mountains, and they may occur elsewhere in southern Colorado.

Locally, the most significant focus of the Plains Woodland horizon is the Graneros focus, which may be coeval with, or an outgrowth of, the Parker focus. It appears about AD 350 to 450 and is known to occur in the Chaquaqua Plateau, southwestern Colorado Piedmont, and Raton Pass area of the Park Plateau. Graneros sites may occur in the mountain parks and upper Platte drainage, but only two sites resemble a Graneros site.

Graneros traits include small villages along drainages, circular habitations with horizontally placed stone foundations, conoidal-based Woodland pots, small corner-notched arrow points, and, perhaps in its latest stage, farming. The material laid the foundation for the development of the later Apishapa culture; before the Plains Woodland stage terminated (*ca.* AD 1000), other traits such as contiguous and partitioned rooms were added to the Graneros focus on the southeastern Chaquaqua Plateau.

Graneros sites have not been reported from the southeast Colorado Piedmont, Southern High Plains, or Las Vegas Plateau. Late Plains Woodland materials in the Southern High Plains are related more closely to materials in western Oklahoma. In the southeastern Piedmont, the affiliation of Woodland materials is undetermined, whereas on the Las Vegas Plateau it is uncertain whether Woodland material occurs, but this district as well as the southeastern Colorado Piedmont probably served as seasonal foraging areas for Graneros people.

The Graneros focus probably was influenced by two main areas. An early Plains Woodland horizon in the Denver Basin and South Platte drainage may have been responsible for the introduction of cord-marked conoidal pots; corner-notched arrow points; and the bow and arrow. Graneros may have traded or introduced the domestication of maize into the Denver Basin. Stone foundations and pre-Harinosa de Ocho maize may have been introduced from the upper San Juan Valley Anasazi to possible Graneros occupants of the San Luis Valley, whereas obsidian and turquoise may have been traded to the latter by way of the middle Rio Grande Anasazi. Graneros may have introduced corner-notched arrow points and the bow and arrow into the Southwest and later (AD 700) may have influenced some utility ware styles found in north-central New Mexico.

About AD 1000 most southwestern Plains Woodland foci were replaced by a well-developed Late Prehistoric horticultural complex, the Apishapa focus, an early Panhandle horizon.

Although Graneros material is confined to the northwestern districts, later Apishapa materials appeared in nearly all districts. Apparently, there was a major expansion of horticultural people in the eleventh century due to the introduction of improved horticultural traits such as Harinosa de Ocho maize. By the start of the twelfth century, Apishapa people occupied the mountain parks, the Chaquaqua Plateau, the northern and western parts of the Las Vegas Plateau, and the Southern High Plains; there are no definite Apishapa sites on the Park Plateau. In almost all cases, the sites are located within canyon terrain, which extends from the western edge of the San Luis Valley and upper Arkansas Valley southeastward to the Canadian escarpment in New Mexico and the Plains Border in the Texas-Oklahoma panhandles.

Most sites are characterized by defensive locations and structures, various forms of houses with vertically placed slab wall foundations, and superstructures of perishable materials, side-notched or unnotched arrow points, snub-nosed scrapers, square-flanged drills, globular cord-marked pots with straight or everted undecorated rims, horticulture with maize, and reliance on foraging. There is some variation from one district to another. The Colorado sites usually include circular enclosures and barrier walls at fortified villages, many contiguous or partitioned rooms, some D-shaped and oval rooms, and, rarely, rectangular rooms. The New Mexico sites are less complex, having only single circular or oval rooms, no fortifications or rectangular rooms, and little pottery. The Texas-Oklahoma Panhandle sites have more rectangular rooms and fewer circular rooms, tunnel entryways, no barrier walls, bone hoes and digging stick points, alternately bevelled, diamond-shaped knives, and bone rasps. Despite

the local variations, the similarities between Apishapa and Antelope Creek materials are greater than with other archaeological manifestations in adjacent areas.

As can be seen from Table 3 regarding the occurrence of 131 specific cultural traits, Antelope Creek-Optima has the same degree of frequency as Apishapa in 74 cases. A comparison of Apishapa with other cultures shows that Custer-Washita has the same degree of frequency in 68 cases, Upper Republican in 53 cases, Park Plateau Pueblo in 37 cases, and Jornada Mogollon in 33 cases. Antelope Creek-Optima has the same degree of frequency as Custer-Washita with 70 traits. The high frequency of shared traits among the three Southern Plains cultures indicates that a common tradition was widespread throughout the Southern Plains in Late Prehistoric times. The Southern Plains are more similar to the Central Plains than to the marginal Southwestern cultures—the Park Plateau and the Jornada Mogollon. However, all six cultures on the table share more traits than the table shows; a few traits that appear with equal frequency in all cultures were omitted from the table.

Variations among the Panhandle foci are due in part to varying degrees of influence from different districts adjacent to the Panhandle area. Apishapa expansion and migration brought the Panhandle people into proximity to the Custer-Washita people in the east, the Upper Republican people in the northeast, Jornada Mogollon people along the south, and Pueblos along the west.

Pueblos were expanding eastward to the Park Plateau and upper Mora Valley from the Taos area and to the upper Pecos Valley from the Jemez Creek area in the eleventh and twelfth centuries. Pueblo trade goods such as pottery, turquoise, obsidian, olivella shell, and selenite appear often in the western parts of the Panhandle area; obsidian is the most widespread and common trade item. Jornada Mogollon pottery appeared at sites along the southern part of the Las Vegas Plateau. Southwestern influence may account for the development of vertical slab foundations, globular form of vessels, slipping of pottery, and farming of *Harinosa de Ocho* maize. Otherwise, the Pueblos had little effect on these Plains people, and, as a result, trade between the two was not too common during this horizon (see Fig. 7).

In the eastern part of the Panhandle area, either Upper Republican or Custer-Washita influence or both are noticeable. Rectangular rooms, four central post supports, central fire pits, storage pits, various chipped stone and bone tools, incised pottery rims, salt, and Medicine Creek flint probably were contributed to the Panhandle culture by their eastern and northeastern neighbors.

Panhandle influence on the Upper Republican and Custer-Washita cultures involved the diffusion of a few Southwestern traits. Globular pottery and *Harinosa de Ocho* maize may have been transmitted to the other Plains groups. Panhandle culture may have contributed more to the Southwest than it received. Incised rims on pottery, side-notched arrow points, Alibates flint, game produce such as bison, and, perhaps, square-flanged drills and snub-nosed scrapers were traded or diffused to the Anasazi, whereas vertical slab masonry and a few other minor architectural traits may have been diffused to the northern Jornada Mogollon.

TABLE 3.—*Cultural trait occurrence and degree of frequency of major foci (phases) of the Southwestern Plains, AD 950 to 1450. AP, Apishapa, AD 1000 to 1300; AC-O, Antelope Creek-Optima, AD 1000 to 1450; C-W, Custer-Washita, AD 950 to 1450; UR, Upper Republican, AD 1000 to 1450; PPP, Park Plateau Pueblo, AD 1000 to 1300; JMS, Jornada Mogollon, AD 950 to 1350. A, absent; R, rare; C, common; V, frequent; ?, doubtful.*

Traits	AP	AC-O	C-W	UR	PPP	JM
Subsistence						
Horticulture	C	C	C	C	V	V
Hunting	V	V	V	V	C	C
Gathering	V	C	C	C	C	C
Fishing	A	A	C	C	A	A
Crayfishing	R	A	A	?	A	A
Ditch-irrigation farming	A	A	A	A	C	C
Maize	C	C	C	C	V	V
Beans	R	A	C	C	?	V
Squash	A	A	A	C	?	V
Settlement						
Encampments	C	R	C	C	R	R
Sheltered sites	C	C	A	R	R	R
Walled sheltered sites	C	R	A	A	R	A
Fortification walls	C	R	A	A	R	A
Defensive positions	C	C	R	A	R	R
Single room sites	V	V	V	V	R	R
Multiroom sites	C	C	A	A	V	V
Low terraces	R	R	R	C	C	C
High points	C	C	C	R	R	R
Habitations						
Saucer-shaped floor	R	A	A	A	A	A
Excavated floor	R	R	R	C	A	A
Circular outline	V	C	A	A	A	R
Oval outline	R	R	A	A	A	R
D-shape outline	R	R	A	A	A	A
Rectangular outline	R	V	V	V	V	V
Four central post support	A	C	V	V	A	C
Surface entrance	R	C	R	R	C	C
Above surface entrance	C	C	R	R	R	C
Tunnel entryway	A	C	V	V	A	R
Central fire pit	R	C	V	V	V	V
Extramural fire pit	C	C	?	?	?	?
Flat roof	A	?	?	?	V	V
Dome roof	V	C	C	C	A	A
Perishable superstructure	V	C	V	V	R	R
Horizontal stone foundation	R	R	A	A	A	A
Vertical slab foundation	V	V	A	A	A	R
Double row slab foundation	R	C	A	A	A	A
Dressed masonry	A	A	A	A	C	C
Coursed masonry	A	A	A	A	V	V
Metate used in masonry	C	C	A	A	A	A
Multitier masonry	R	C	A	A	V	V
High wall masonry	A	R	A	A	V	V
Second story dwelling	A	A	A	A	R	C
Adobe-Jacale walls	A	R	V	V	R	C

TABLE 3.—Continued.

Adobe mortar	A	C	A	A	V	C
Adobe wall plaster	A	C	A	A	V	V
Adobe-rubble fill-in	R	C	A	A	A	A
Partitioned multiunits	R	C	A	A	V	V
Partitioned rooms	C	C	A	A	V	V
Contiguous rooms	C	C	A	A	R	R
Abutting rooms	C	R	A	A	A	A
Adjoining storage rooms	C	V	A	A	V	V
Depressed floor center	A	R	A	A	A	A
Altar or bench	A	R	A	A	A	A
Subfloor storage pits	A	C	V	V	V	V
Extramural storage pits	R	C	C	C	C	C
Bell-shaped pits	A	R	R	V	A	A
Refuse pits	R	R	V	R	A	A
Mound middens	A	R	A	R	C	C
Sheet middens	V	V	V	V	C	C
Materials						
Hornfels	R	A	A	A	C	A
Cryptocrystalline quartz	V	V	V	V	R	C
Quartzite	V	C	C	C	R	R
Basalt	R	A	A	A	C	?
Sandstone	C	C	C	C	R	C
Limestone	A	C	A	?	?	?
Pliable plant material	C	C	C	C	V	V
Rigid plant material	C	C	C	C	R	R
Bone and antler	V	V	V	V	C	C
Shell	R	C	C	C	R	R
Tools, utensils, etc.						
Unnotched arrow point	C	V	R	A	C	V
Side-notched arrow point	V	C	V	V	C	C
Corner-notched arrow point	C	R	R	R	C	C
Dart point	R	R	R	A	A	A
Bow and arrow	C	C	C	V	V	V
Dart or spear	R	R	R	A	A	A
Diamond-shaped knife	A	C	C	V	A	A
Triangular knife	V	R	V	V	R	R
Ovate knife	C	C	C	C	R	C
Side scrapers	C	C	C	C	R	?
Snub-nosed scrapers	V	V	V	V	R	C
Straight-shafted drills	R	C	R	A	?	?
Flanged drills	C	C	R	C	?	?
Square-flange drills	C	C	R	A	?	?
Slab metate	V	V	V	A	C	A
Trough metates	A	A	A	A	C	C
Bifacial metate	R	R	A	A	A	A
Fixed mortars	V	V	A	A	R	A
One-hand manos	V	V	V	A	C	C
Two-hand manos	A	A	A	A	C	C
Bone awls	A	A	A	A	C	C
Scapula hoe blades	A	C	C	C	A	A
Metapodial stick points	A	C	C	C	A	A
Digging sticks	C	C	C	C	C	V
Basketry	C	C	?	?	C	C

TABLE 3. — *Continued.*

Sandals	C	R	?	?	C	C
Tubular bone beads	V	V	V	V	C	?
Shell beads	R	R	R	A	C	C
Stone pendants	R	A	A	A	A	C
Bone pendants	A	A	C	A	A	A
Shell pendants	A	R	A	A	A	C
Tubular pipes	R	C	A	A	A	A
Other pipes	A	C	C	C	A	A
Bone rasps	A	C	C	C	A	A
Bone gambling pieces	A	A	C	C	A	A
Bone fishhooks	A	A	A	C	A	A
Ceramics						
Figurines	?	A	R	A	A	A
Grit temper	V	C	C	V	V	V
Calcareous temper	A	C	V	A	A	A
Coiled	A	A	A	A	V	V
Paddle anvil	V	V	V	V	A	A
Basketry-molded	A	A	A	A	C	A
Gray ware	C	C	C	C	C	A
Brown ware	A	A	A	A	A	C
Globular form	V	V	V	V	V	C
Many forms	A	A	A	A	A	C
Collared rim	A	A	A	V	A	A
Decorated rim	R	C	R	V	R	A
Cord-marked	V	V	V	V	A	A
Corrugated	A	A	A	A	C	A
Basket-impressed	A	A	A	A	C	A
Plain	A	?	R	A	V	C
Painted	A	A	A	A	A	C
Slipped	R	R	A	A	C	C
Burials						
Primary, flexed	C	C	C	A	C	C
Secondary, ossuary	A	A	A	C	A	A
Individual graves	C	C	C	R	C	C
Multiple graves	R	R	R	C	R	R
Extramural pit graves	C	C	V	V	V	V
Subfloor graves	C	C	A	A	C	C
Accompaniments	R	R	R	R	C	C
Slab-lined graves	R	C	R	A	C	C

In the late thirteenth century, a wide area—the mid-southern Rocky Mountains, Colorado Piedmont, Chaquaqua Plateau, and northern Las Vegas Plateau—was abandoned. Fourteenth century Panhandle sites were concentrated in the southeastern Canadian Valley in New Mexico and in the Texas-Oklahoma panhandles. Evidence of widespread drought in the Southwest and the western Plains in the thirteenth century suggests that Panhandle farmers may have been affected by the adverse conditions and forced to settle in areas with greater annual precipitation and more arable land.

Panhandle occupation in the Southern High Plains reached a peak between AD 1300 and 1450. This was due in part to the arrival of new migrants from

northwest of this area, which resulted in an increased population and a need for larger villages and more defensive structures of habitations.

The area west of the 20-inch annual rainfall line of western Texas and eastern New Mexico, or the Canadian River Valley, was occupied by Panhandle people who retained the single, circular slab-enclosures, small villages, and a conservative artifact inventory. Sites here were occupied from the late thirteenth century into the early historic period; they probably were occupied by the Teyas, a Caddoan group that abandoned New Mexico sometime between AD 1525 and 1540. The Teyas may have shifted into the Texas panhandle following its abandonment by the Antelope Creek people after AD 1450 and then continued their shift eastward toward south central Kansas and north central Oklahoma in the late sixteenth century. The Teyas and related groups may be ancestral to the Tawakoni, a Wichita group that migrated southward from central Oklahoma to the Brazos River in Texas in the late seventeenth century.

Antelope Creek development in the Southern High Plains marks the architectural high point of Panhandle culture. Multiunit rectangular structures, some with 30 to 40 units, were constructed. The crude masonry consisted of walls of double rows of slabs; multitier, inset walls rising to four feet in height; and use of adobe for foundations, mortars, and wall plaster. However, most of these traits occurred in an incipient form in the earlier Panhandle horizon; one multiunit, rectangular village with double row slab walls has been reported from the Chaquagua Plateau.

There was little change in artifact types; but trade with the Southwest increased. More obsidian and Pueblo ware was associated with these large sites than with smaller and perhaps earlier ones (Fig. 7).

By AD 1450, Antelope Creek culture in the Texas-Oklahoma panhandles started to decline. Severe drought conditions again may have been responsible for a new migration. The Antelope Creek people probably moved northeastward to the Great Bend of the Arkansas River in central Kansas where they became the historic Quivirans, the ancestors of some of the modern Wichita.

Sometime after AD 1300, small sites consisting of earth rings and small spaced stone rings appeared on the Chaquagua Plateau. These seem to be habitations of a foraging population, possibly the prehistoric Querecho (Lipan) Apache. By AD 1541, the Querecho were in the northern part of the Southern High Plains, or the Las Vegas Plateau. By 1581, they moved south to the Canadian River in New Mexico, and in 1695 they reached the Red River in Texas. In their wake other bands of Apache, the Jicarilla, settled on the Colorado Piedmont, Central High Plains, and Chaquagua Plateau. The Jicarilla adopted a ceramic industry and a horticultural-foraging subsistence pattern sometime after AD 1550.

Between AD 1700 and 1730, the warlike, mounted Comanche moved southward and forced most of the Apache bands from their former homeland. Other horse nomads arrived by the early nineteenth century and remained until forcibly removed by Anglo-American military operations in the latter part of that century. A number of simple, spaced stone structures, found throughout all

districts except the mountain parks, mark the locations of the horse nomads and provide some evidence of the final stage of aboriginal occupation of the southwestern Plains.

CONCLUSIONS

Archaeological investigations conducted through field research, laboratory analysis, and library research with archaeological materials from the Chaquaqua Plateau of southeastern Colorado indicate that a large part of these materials are quite similar to Panhandle aspect materials that are found in adjacent areas to the east. Consequently, it seems reasonable to assume that the local materials represent a variant of Panhandle culture, a variant that has been previously recognized and defined as the Apishapa focus.

The minor distinctions between Apishapa materials and Panhandle of adjacent areas, principally the Antelope Creek focus of the Texas-Oklahoma panhandles, are largely quantitative. Some materials are more common at Apishapa focus sites, whereas others are more so at sites of the Antelope Creek focus; but most materials can be found in greater or lesser quantities in both foci. Variations result from spatial and temporal differences; most materials of the Apishapa focus appear in Colorado between AD 1000 and 1300, and most Antelope Creek focus materials appear in Texas between AD 1300 and 1450; however, there is some overlap geographically and temporally.

A review of adjacent districts reveals that the Apishapa sites are more widespread than Antelope Creek sites. Both foci appear to be influenced by the Southwest and the Central and Southern Plains. The Southwest had a greater effect on the Apishapa culture than on Antelope Creek, but the influence was not profound in either case. Antelope Creek seems to have been influenced more strongly than Apishapa by adjacent Plains culture.

Other materials from the Chaquaqua Plateau consist of earlier structures and artifacts that are similar to those of the Apishapa focus; they are affiliated with the Graneros focus, a Plains Woodland manifestation. The focus probably developed into the Apishapa focus on the Chaquaqua Plateau; consequently, the appearance of Apishapa culture did not result from immigration, but from a local cultural change.

Panhandle culture vanished from the Chaquaqua Plateau before the start of the historic period. Drought probably played a part in its decline and disappearance. Additional archaeological material found on the Plateau may relate to later cultures that replaced the Apishapa focus. Judging from ethnohistoric documents, the later material most likely is affiliated with prehistoric Apache culture. Apaches were residing in the district at the start of the historic period; but they were soon replaced by invading horse nomads.

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